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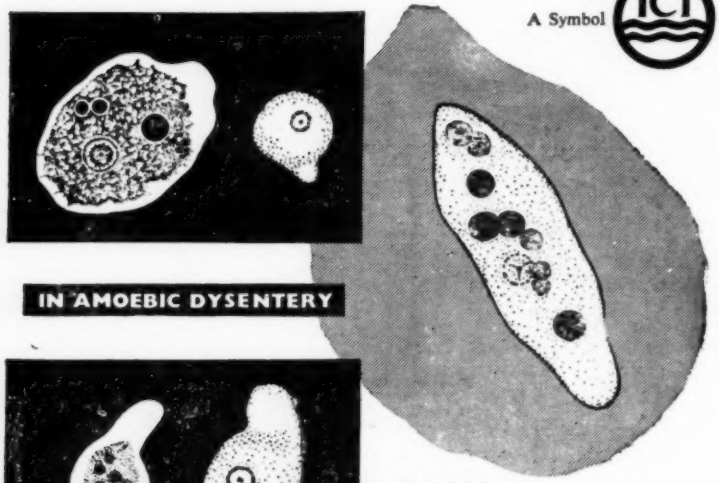

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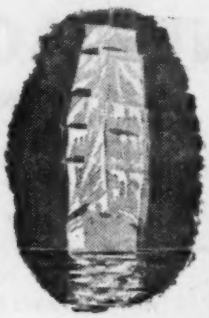

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1. Tobie, J. E.; Most, H.; Reardon, L. V., and Bozicevich, J.: Am. J. Trop. Med. 31:414 (July) 1951. 2. King, E.Q., et al.: J.A.M.A. 145:3-4 (May 4) 1950.

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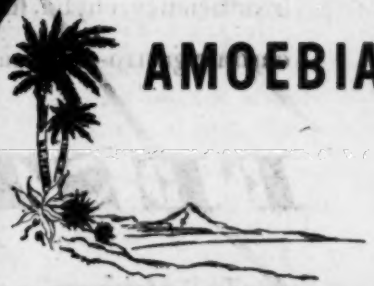

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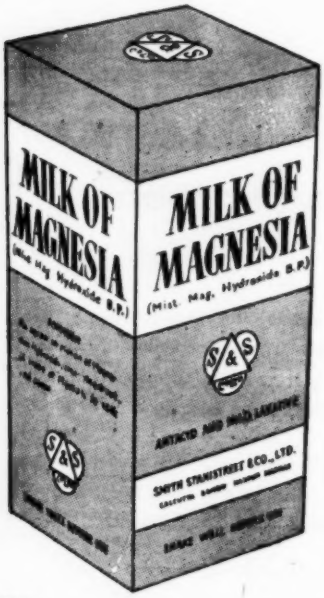

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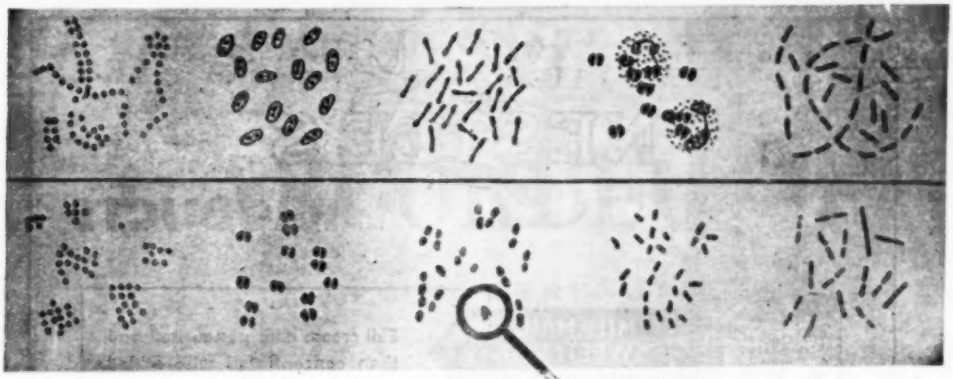

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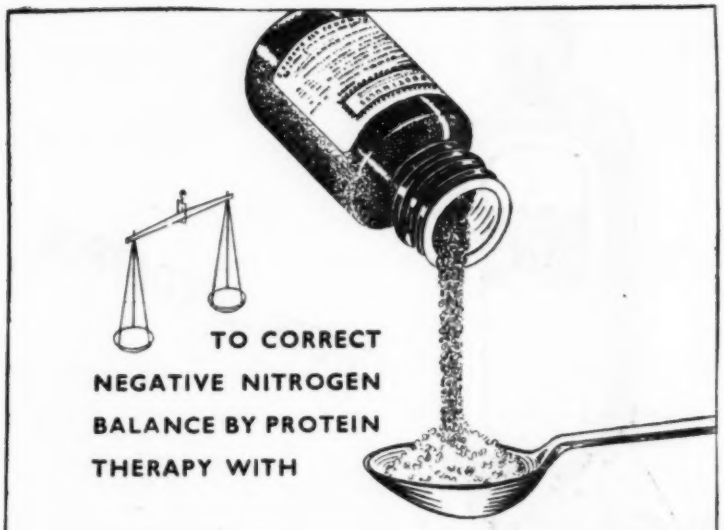

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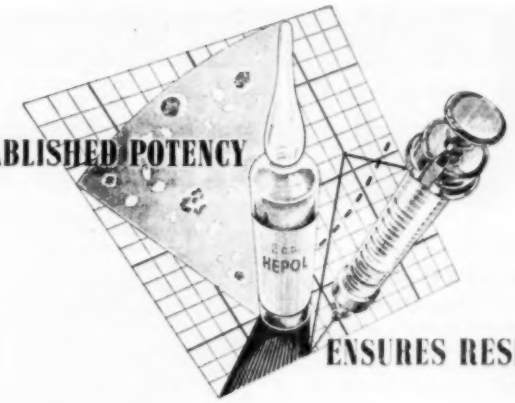

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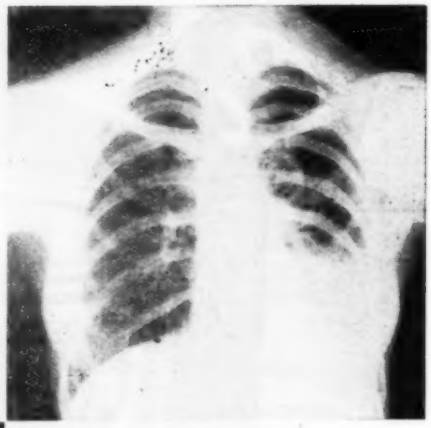

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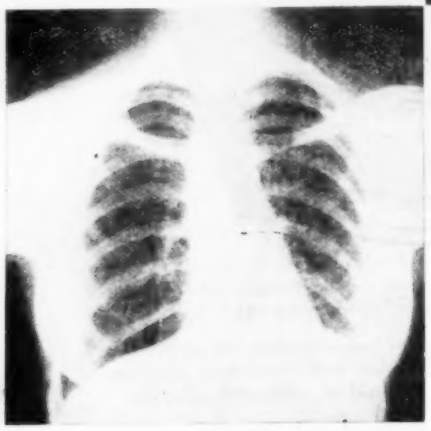

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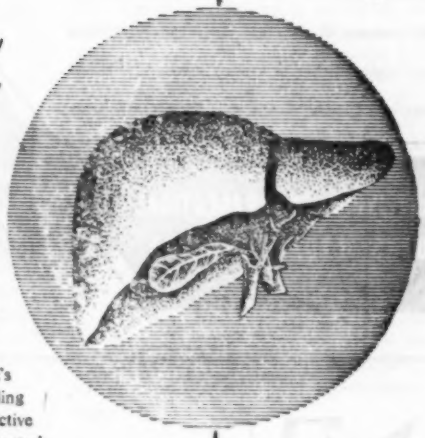

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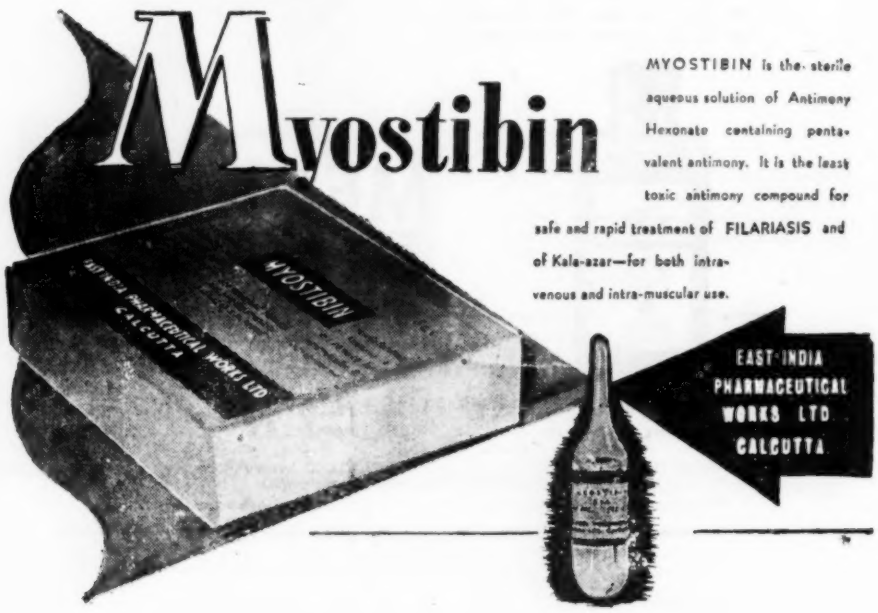

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ORIGINAL ARTICLES

SOME OBSERVATIONS ON CIRRHOSIS OF THE LIVER*

N. J. MODI, M.B., M.R.C.P. (LOND.),

Honorary Physician, Gokaldas Tejpal Hospital and Sir Harkishan Das Hospital, Teacher in Clinical Medicine, Grant Medical College, Bombay

Many workers have studied the experimental production (Gyorgy and Goldblatt, 1939) and prevention (Blumberg and McCollum, 1941) of hepatic lesions paralleling those of human cirrhosis and have thrown much light on the several ætiological factors related to cirrhosis of the liver and have given a new orientation to the treatment of this disease.

Many clinicians started to apply the physiological principles learned from animal experiments to human sufferers of cirrhosis. Several experimental studies have shown the importance of cumulative effect of dietary deficiencies, imbalance of nutrition, hepatotoxic and infective factors. Since then hepatic injury resulting from dietary deficiencies has attracted considerable attention and much information concerning the causation of hepatic disease has been acquired.

Patek (1937) was the first to apply the findings of experimental work, in a systematic manner to the study and management of the cirrhotic patient by giving a high protein, high vitamin regimen. Patek and Post (1941) later presented evidence which suggested that there is a significant relationship between the occurrence of nutritional deficiency and cirrhosis of the liver and also showed that the clinical course of patients with cirrhosis of the liver treated with a high protein nutritious diet supplemented with vitamin B concentrates was more favourable than that of the control series.

Rao (1936-37) has also suggested that dietetic deficiency appears to be an important factor in the causation of this disease. He has also shown its high incidence in certain parts of India. Reddy (1951) gives an autopsy percentage incidence of six in Andhra, during the years 1929-1950.

The successful work of Patek and his associates have encouraged other workers in the field to apply this regimen with slightly modified procedure as to the type and amount of proteins and vitamins. Mallik, Snujatali and Anand (1945) reported clinical improvement in 9 cases of portal cirrhosis as a result of treatment with milk and high protein diet.

Several lipotropic factors like choline and methionine have been given greater importance in dietetic therapy (Beams, 1946) but the general opinion seems to exercise caution in assessing the efficacy of any single therapeutic agent in the dietary treatment of the liver disease (*Nutrition Rev.* 1950).

In this paper are reported the findings of 37 cases of cirrhosis of the liver, who were under treatment at the Gokaldas Tejpal Hospital Bombay during a period of four and a half years—November, 1946 to June, 1951.

METHOD AND MATERIAL

It was planned to study these cases from the point of view of ætiology, and to follow the clinical condition of the patient under dietetic treatment by periodical routine investigations like blood counts etc., and biochemical investigations including total serum proteins, total albumin, total globulin, and in some cases the euglobulin and pseudoglobulin were also estimated. This allowed a study of the changes in the total serum protein and its different fractions of patients under treatment. Changes in total blood choline were also studied by frequent estimations in most of the cases.

There was no selection of cases ; they were taken up for investigation as admitted in the wards.

Out of 37 cases reported, 15 went out as cured, the criterion for cure being entire clinical disappearance of fluid and no further formation of fluid in the abdomen for sometime, mostly associated with improvements in total serum protein and albumin and total blood counts. Ten cases showed fair amount of improvement, seven cases died and one other that had gone out ' cured ' came back after nearly five and a half months, and died of acute infective diarrhœa. Three cases showed no improvement and in 2 cases no conclusions could be drawn as they were observed for less that 15 days.

* From the 1st Medical Unit, G. T. Hospital, Bombay

Of the 37 cases, 33 were males and 4 females, the youngest being 6 years and the oldest being 85 years. Excluding the youngest, two cases of 6 and 8 years and the oldest of 85 years, the average age of the other 34 cases was 37 years. 25 cases were between the ages of 25 and 45 years.

There were 31 Hindus, 5 Mahomedans and 1 Christian. These cases belonged to the lower middle class, and were drawn from all parts of India, representing the common cross-section of the population of Bombay. By occupation there were 9 farmers, 3 in clerical service, 2 goldsmiths, 2 hawkers, 2 hotel boys, 2 electricians, 2 road side cases, 2 labourers, and one each watchman, "toddy" shop servant, hotel manager, photographer, shoemaker, coppersmith and factory worker. All the four females were used to doing house work.

Aetiological and antecedent factors—In the cases studied, the two important ætiological or antecedent factor seemed to be alcohol and malaria. 20 cases (54 per cent) gave history of addiction to alcohol and an equal number also gave history of having had malaria. There were 8 cases which gave history of both addiction to alcohol and malarial attacks. The history of taking alcohol varied both in quantity and quality and also in the duration.

Some were used to taking a pint others a glass or two of country liquor or "toddy" or few pegs of cheap whisky, duration varying from a few years to thirty years, 54 per cent of the cases were found to have been chronic alcoholics.

The history of dysentery was present in 10 cases, two years back on the average. In two cases there was history of jaundice. In one case there was a history of hæmatemesis 4 months before admission and another case died of hæmatemesis. Six cases gave history of syphilitic infection, 16 cases gave history of smoking mostly "bidis," 3 were also in the habit of chewing tobacco and one used to smoking "ganja" also.

Diet—The majority of these cases were from the working class, 26 were used to mixed diet and 11 were vegetarians. Typically the mixed or vegetarian diet was poor in quality and quantity, meat was only occasionally taken and vegetarian diet often consisted only of half pound of rice and half pound of "jawar" with very little of protective foods, so that many did not have a diet even of the caloric value of about 1,800 to 2,000 calories.

Symptoms and Signs

The presenting symptom of all patients was enlargement of the abdomen, varying in duration from about a month to two years. 14 patients gave a history of about one month's duration, 11 of 2 months and the rest 12 varying from 3 months to 2 years. All the cases showed evidence of fluid in the abdomen. Majority of the patients (28) showed œdema of feet on admission, which had usually followed sometime after enlargement of abdomen. Only a few cases gave history of loss of appetite or dyspeptic symptoms, 3 cases gave history of abdominal discomfort and gas formation before development of ascites. The spleen was enlarged in 19 cases, mostly the enlargement varied from 1 to 6 fingers; in one case the size of the spleen was reduced from 6 to 2 fingers after treatment.

The liver was enlarged in only 7 cases and jaundice was observed in 2 cases. Carious or dirty teeth were observed in only 7 cases; 8 cases showed a pale tongue, 3 of them also showed an accompanying glossitis.

Evidence of avitaminosis in the form of dry skin was seen in 9 cases, with a certain amount of scaliness or shining condition of the skin. Pale nails were observed in 26 cases, 2 of them also showed evidence of koilonychia.

In the respiratory system five cases showed evidence of effusion at one base; one of these cases also had tubercular infiltration at right apex; One case showed evidence of collapse of the left base with cystic bronchiectasis.

Nothing abnormal was noticed in the cardiovascular system. In 3 cases, a soft pulmonary systolic murmur was heard and in one case a soft systolic murmur at the mitral area was noticed. The average blood pressure was low, varying from 100 to 120 systolic and 70 to 80 diastolic.

No evidence of heart failure was observed in any of these cases. No changes in the central nervous system as regards polyneuritis etc., were observed. No mental changes were noticed in these cases, except those that died in a state of cholæmia. Hæmatemesis was noticed in only two cases.

Ascites—8 patients required no tapping and gradually improved. On an average the patients were tapped 5 to 6 times while in hospital, the number varied a great deal depending on the duration of stay in the hospital. One case was tapped 45 times during his stay of one year and seven months in the hospital. The amount of protein in the ascitic fluid varied from 0·2 per cent to 1·5 per cent, the average value being 0·57 per cent.

Results of Laboratory Investigations

A certain amount of correlation between laboratory investigations and the clinical course of the cases has been observed. The cases reported here are divided into 3 groups; first, cases that were clinically cured; second, cases that showed improvement; third, cases that died or did not improve or stayed in hospital for less than 15 days.

The details of various laboratory findings are given in Tables 1, 2 and 3. Table 4 gives the average values, before and after treatment in the various groups, of

total proteins, serum albumin, serum globlin, euglobulin and pseudoglobulin, the last two values were not investigated in all the cases. The total serum proteins were estimated by the microkjeldahl procedure ; albumin, globulin and euglobulin were determined according to Howe's (1921) technique. 76 blood choline estimations were done in 25 cases out of this series, the minimum figure was 4·00 mgm. per 100 c.c. of blood and the maximum was 37·83 mgm. per 100 c.c. of blood, the average value was 17·23 mgm. per 100 c.c. of blood. No definite conclusions could be drawn regarding the significance of blood choline values.

TABLE I—SHOWING THE DETAILS OF 15 CASES THAT WERE CLINICALLY CURED

Case No. and Name	*Date*	*Total proteins in gms. per 100 c.c.*	*Total albumin*	*Total globulin*	*Total euglobulin*	*Total pseudoglobulin*	*Blood choline in mgms. per 100 c.c.*	*R.B.C. × 106*	*Hæmoglobin %*	*Total amount of ascitic fluid drawn in ozs.*	*Total amount of proteins lost in ascitic fluid in gms.*	*Remarks*
1. P. P. ...	19-11-46	3·46	1·06	2·40	0·70	1·70		3·2	65			
	29-11-46	3·55	1·07	2·48	0·70	1·78				694	104·1	
	18-12-46	4·80	1·90	2·90	0·65	2·25						
	21- 1-47	5·60	2·80	2·80	0·53	2·27		3·9	75			
2. B. S. (A)	1- 4-47	4·89	1·68	3·21	...	...	28·32	3·8	70			Admitted twice A. & B.
	27- 5-47	6·51	4·53	1·98	...	...	19·60					
(B)	22-11-47	4·37	2·37	2·00	0·71	1·29	10·30	3·1	55			
	9-12-47	5·26	2·07	3·19	1·21	1·98	11·30					
	10- 2-48	5·10	2·64	2·46	1·08	1·38	13·23	3·3	60	3326	399·2	
	1- 3-48	6·43	2·31	4·12	1·51	2·61	21·72					
	22- 3-48	6·43	2·51	3·92	1·34	2·58	19·78	3·6	70			
	29- 3-48	6·68	2·56	4·12	1·46	2·66	13·47					
	5- 4-48	7·50	3·02	4·48	1·89	2·59	24·50					
	16- 4-48	7·50	3·19	4·31	1·73	2·58	19·76	4·1	80			
3. A.M. ...	17- 4-47	8·80	1·95	6·85	...	...	22·54	3·62	70			
	27- 5-27	10·52	2·33	8·19	...	...	7·60	3·98	80			
4. Y. B. (A)	16- 7-47	6·00	2·13	3·87	1·87	2·00	26·10	3·10	57			Admited thrice A. B. & C.
	24- 7-47	6·16	2·98	3·18	...					178	26·7	
	13-12-47	6·94	3·29	3·65	1·47	2·18						
(B)	12- 4-48	6·44	3·07	3·37	1·19	2·18	12·43	2·91	50			
	26- 4-48	6·81	3·81	3·00	0·72	2·28	22·17	3·8	75			
(C)	26- 4-49	6·40	4·12	2·28	0·53	1·75	23·00	4·12	80			
	13- 5-49	6·98	2·99	3·99	1·24	2·75	23·33	3·64	74			
	27- 5-49	7·14	2·68	4·46	1·73	2·73	30·18	4·34	84			
5. L.J. ...	7- 8-47	4·71	0·87	3·94	1·73	2·21	13·30	3·22	60			
	5- 9-47	6·58	1·02	5·56	...							
	26- 9-47	6·03	1·77	4·26	2·01	2·25	9·70					
	15-10-47	5·32	2·76	2·56	0·58	1·98	14·40					
6. H. S. ...	16- 1-48	6·84	3·04	3·80	0·83	2·97	11·33	3·13	58			
7. S. N. ...	20- 2-48	5·86	1·72	4·14	1·36	2·78	8·63	2·90	55			
	8- 3-48	7·01	2·39	4·62	1·17	3·45	11·4	3·60	70	156	24·2	
	22- 3-48	8·09	3·05	5·04	...		12·60	4·20	85			
8 K. G. ...	9- 4-48	7·48	3·57	3·91	1·21	2·70	4·72	0·91	25			
	6- 5-48	7·63	4·37	3·26	0·58	2·68	18·66	3·60	70			
	1- 6-48	7·84	3·63	4·21	...		21·32	3·90	75			
	17- 6-48	7·03	3·95	3·08	0·42	2·66	19·80	4·20	85			
9. H. A. R.	26- 7-48	6·06	2·59	3·47	1·22	2·25		2·20	40			
	25- 8-48	6·25	2·73	3·52	1·35	2·17		2·00	38			
	13- 9-48	5·65	2·34	3·31	1·22	2·09	20·02	2·70	46	1280	192	
	4-10-48	5·35	2·03	3·32	1·23	2·09	14·08	3·00	58			
	17-10-48	5·96	1·71	4·25	1·46	2·79		3·40	64			
	28-10-48	6·86	2·50	4·36	1·39	2·97		3·70	70			
	13-11-48	6·80	2·74	4·06	...							
10. H. P. ...	7 -8-47	4·12	1·48	2·64	...			4·60	90			
	23- 9-47	5·86	1·83	4·03	...			3·50	86	168	20·2	
	4-10-47	6·84	2·40	4·44	...			4·20	86			

TABLE 1—*Contd.*

Case No. and Name	Date	Total proteins in gms. per 100 c.c.	Total albumin	Total globulin	Total euglobulin	Total pseudoglobulin	Blood choline in mgms. per 100 c.c.	R.B.C. × 10⁶	Hæmoglobin %	Total amount of ascitic fluid drawn in ozs.	Total amount of proteins lost in ascitic fluid in gms.
11. B. H. ...	28- 9-48	5·46	2·43	3·03	0·69	2·34	29·06	2·80	48		
	14-10-48	7·49	2·92	4·57	1·65	2·92		3·20	58	44	
	28-10-48	7·98	3·61	4·37	1·27	3·10	18·50	3·50	66		
	12-11-48	8·46	4·53	3·93	0·80	3·13					
12. A. S. ...	29-12-48	5·24	2·76	2·48	0·57	1·91		2·40	42		
	16- 1-49	7·26	3·02	4·24	...		16·90	3·70	72		
	3- 2-49	6·44	2·71	3·73	...		16·91	4·10	76	160	14·4
	18- 2-49	7·35	3·27	4·08	...		14·80	4·61	88		
	7- 3-49	7·86	4·19	3·67	0·87	2·80	19·88	5·23	100		
	23- 3-49	8·54	3·36	5·18	0·85	4·33					
13. B. Y. ...	31- 1-49	4·50	1·10	3·40	...		14·36	2·50	45	Nil	Nil
	18- 2-49	5·18	2·65	2·53	0·88	1·65	13·69	2·69	51		
	7- 3-49	7·50	4·15	3·35	1·13	2·22	23·43	3·12	60		
	22- 3-49	7·50	4·15	3·35	0·31	1·92	23·14	4·32	78		
14. U. G. ...	22- 9-49	6·30	1·33	5·06	...			2·67	48		
	15-10-49	6·26	1·49	4·77	...			2·50	43		
	28-10-49	5·69	1·63	4·06	2·06	2·00		2·20	40		
	15-11-49	5·00	1·97	3·03	1·30	1·73					
	6-12-49	5·70	2·40	3·30	...			2·80	65		
	23-12-49	7·30	3·70	3·60	1·12	2·48		3·30	69		
	23- 1-50	8·00	4·60	3·40	0·92	2·48		3·53	68		
15. K. A. ...	18- 3-51	8·3	2·20	6·10	...			2·80	62		
	30- 3-51	8·6	...	...	...			3·90	78	128	
	15- 4-51	8·7	1·90	6·80	...			4·30	84		
	30- 4-51	8·6	2·40	6·20	...			4·50	88		

TABLE 2—SHOWING THE DETAILS OF 10 CASES THAT IMPROVED

Case No. and Name	Date	Total proteins in gms. per 100 c.c.	Total albumin	Total globulin	Total euglobulin	Total pseudoglobulin	Blood choline in gms. per 100 c.c.	R.B.C. × 10⁶	Hæmoglobin %	Total amount of ascitic fluid drawn in ozs.	Total amount of proteins lost in ascitic fluid in gms.	Remarks
1. B. J. ...	5- 8-47	4·05	1·98	2·07	0·92	1·15		4·00	85	293	47·3	
	21- 8-47	4·85	2·07	2·78	0·98	1·80						
2. P. N. ...	1-12-47	5·19	1·97	3·22	1·00	2·22	20·93	2·51	44	Nil		Improving.
	16-12-47							3·13	55			
3. H. T. (A)	20- 2-48	5·99	1·71	4·28	1·84	2·44	16·18	3·60	55			Admitted twice A. & B.
	8- 3-48	6·34	1·97	4·37	1·92	2·45	9·60	3·20	60			
	22- 3-48	6·34	2·11	4·23	2·00	2·23	10·30					
	29- 3-48	6·35	2·08	4·27	1·99	2·28	10·10					
	5- 4-48	6·41	2·03	4·38	2·15	2·23	10·54					
	19- 4-48	6·31	1·95	4·36	2·08	2·28	24·07	3·90	75	2574	533·5	
	3- 5-48	7·56	2·46	5·10	2·58	2·52	18·66	4·10	80			
	24- 5-48	6·48	2·15	4·33	1·49	2·84						
	7- 6-48	7·26	2·57	4·69	2·13	2·56	20·00	4·40	85			
	(B) 10- 7-48	6·03	2·15	3·88	1·52	2·36	12·77	2·50	45			
	27- 8-48	5·51	1·69	3·82				2·70	48			
	10- 9-48							3·00	56			

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TABLE 2—*Contd.*

Case No. and Name	*Date*	*Total proteins in gms. per 100 c.c.*	*Total albumin*	*Total globulin*	*Total euglobulin*	*Total pseudoglobulin*	*Blood choline in gms. per 100 c.c.*	*R.B.C. × 10⁶*	*Haemoglobin %*	*Total amount of ascitic fluid drawn in ozs.*	*Total amount of proteins lost in ascitic fluid in gms.*	*Remarks*
4. B. P. ...	18-10-48	7·80	1·79	6·01	2·68	3·33	13·10	3·1	56			
	10-11-48	8·00	2·15	5·85	2·33	3·52		3·6	70	1320	118·8	
	23-11-48							3·8	72			
	30-11-48	7·50	2·26	5·24				3·7	72			
5. J. G. ...	24- 2-49	8·46	3·02	5·44	1·78	3·66		1·37	40			
	16- 3-49	7·76	2·68	5·08			10·66	2·00	50			
	2- 4-49	7·79	2·88	4·91			13·80	3·20	75			
	18- 4-49	6·61	3·57	3·04								
	3- 5-49	6·78	3·91	2·87			22·17	3·56	70			
	26- 5-49	6·75	2·53	4·22	1·62	2·60	34·83	3·22	64			
	21- 6-49	6·06	2·17	3·89			30·63	3·12	60			
	2- 7-49	7·85	3·15	4·70	1·96	2·74		2·09	56			
	21- 7-49	7·11	2·87	4·24			18·57	2·45	62			
	16- 8-49	5·76	2·00	3·76				4·10	70			
	2- 9-49	6·23	2·03	4·20	1·72	2·48		3·94	64			
	22- 9-49	6·94	2·93	4·01				3·89	58			
	10-10-49	6·04	1·98	4·06								
	28-10-49	5·75	2·23	3·52	1·52	2·00		3·24	62			
	16-11-49	6·40	2·40	4·00				3·08	60			
	6-12-49	6·20	2·00	4·20				3·12	60			
	22-12-49	5·70	1·40	4·30				3·27	67			
	23- 1-50	6·20	3·30	3·00				3·38	68	13315		
	2- 3-50	6·80	3·40	3·20				3·20	60			
	20- 3-50	7·00	2·40	4·60				3·70	64			
	7- 4-50	6·45	2·45	4·00				3·10	61			
	1- 5-50	6·66	3·30	3·03				2·80	55			
	2- 6-50							3·00	59			
	26- 6-50	7·20	3·60	3·60				3·20	61			
	18- 7-50	6·40	3·20	3·20				3·30	63			
	1- 8-50	7·20	3·80	3·40				3·20	68			
	15- 8-50	6·80	3·80	3·00				3·80	70			
	30- 8-50	6·80	4·00	2·80				4·00	72			
	13- 9-50	7·20	4·00	3·20				4·00	74			
6. G. S. ...	23- 5-49	6·26	1·58	4·68	2·33	2·35		2·31	45			
	7- 6-49	8·26	2·79	5·47	2·35	3·12	18·17	2·61	48			
	22- 6-49	7·70	2·81	4·89			21·20	2·62	50			
	9- 7-49	8·66	3·01	5·65	2·92	2·73		2·61	55			
	27- 7-49							2·94	50			
	1- 8-49	7·11	2·87	4·24								
	16- 8-49	8·78	2·74	6·04	1·64	4·40	10·77	3·15	68			
	29- 8-49	5·28	2·02	3·06	0·78	2·48	24·59	4·12	70			
7. A. H. R.	11- 4-49	6·68	2·81	3·87	0·78	3·09	22·57	1·31	22			
	26- 4-49	6·85	3·97	2·88			37·83	2·32	40	Nil		
	16- 5-49	7·54	4·05	3·49	0·39	3·10		3·34	60			
8. G. H. ...	2- 7-49	7·24	2·53	4·71	1·78	2·93		2·19	45			
	18- 7-49	7·77	2·87	4·24				2·30	50			
	1- 8-49	7·05	2·54	4·51				2·50	54			
	16- 8-49	6·74	2·65	4·09	1·05	3·04	15·03	3·26	64	252		
	2- 9-49	5·35	2·03	3·22			27·15	3·50	60			
	22- 9-49	5·53	1·74	3·79				3·98	68			
	10-10-49	5·76	1·95	3·81	0·81	3·00		4·00	66			

TABLE 2—*Contd.*

Case No. and Name	Date	Total proteins in gms. per 100 c.c.	Total albumin	Total globulin	Total euglobulin	Total pseudoglobulin	Blood choline in gms. per 100 c.c.	R.B.C. × 10⁶	Hæmoglobin %	Total amount of ascitic fluid drawn in ozs.	Total amount of proteins lost in ascitic fluid in gms.	Remarks
9. J. A. S.	26- 8-50	7·10	3·20	2·70				2·20	46			
	15- 9-50	6·80	2·40	4·60				2·70	50			
	30- 9-50	7·00	3·00	4·00				3·00	62			
	14-10-50	6·60	3·20	3·40				3·20	68			
10. B. T. ...	4- 1-51	4·70	1·60	3·40				1·80	38			
	15- 1-51							2·00	48	789		
	2- 2-51	4·80	1·60	3·20				2·20	46			
	7- 2-51							3·00	62			

TABLE 3—SHOWING THE DETAILS OF 12 CASES THAT DIED OR DID NOT IMPROVE

Case No. and Name	Date	Total Proteins in gms. per 100 c.c.	Total albumin	Total globulin	Total euglobulin	Total pseudoglobulin	Blood choline in gms.	R. B. C. × 10⁶	Hemoglobulin %	Total amount of ascitic fluid drawn in ozs.	Total amount of proteins lost in ascitic fluid in gms.	Remarks
1. R. M. ...	13- 2-47	4·80	2·70	2·10	...	...	...	3·40	65		...	Died.
	18- 3-47	4·36	1·76	2·60	...	...	11·58	3·23	60	844	...	Died.
	10- 4-47	...	...	...	...	...	...	3·10	62		...	
2. S. P. ...	1- 4-47	5·08	1·16	3·92	1·76	2·16	14·72	3·90	74	380	...	Died.
3. R. M. ...	1- 4-47	4·84	0·97	3·87	1·93	1·94	14·86	3·60	65	904	...	Died.
4. K. K. ...	27- 5-47	5·47	2·16	3·31	1·33	1·98	8·40	3·40	58	...	...	Left against medical advice.
5. P. A. ...	31-10-47	6·63	1·41	5·22	2·04	3·18	4·00	3·17	58	...	...	
	18-11-47	7·34	1·71	5·63	2·22	3·41	5·18	...	...	1207	180·1	Died.
	15-12-47	7·30	1·47	5·83	2·99	2·84	4·26	...	...	...	...	
	6- 1-48	6·75	1·33	5·42	2·33	3·09	14·81	3·25	61	...	...	
6. R. G. ...	9- 9-48	5·90	1·80	4·10	...	...	...	2·90	48	...	...	
	21- 9-48	6·20	1·74	4·46	2·12	2·34	...	3·00	52	924	221·6	Died.
	9-10-48	6·92	1·72	5·24	2·25	2·99	...	3·00	58	...	...	
	19-10-48	...	...	...	...	...	...	3·20	60	...	...	
7. M. H. ...	8-11-48	7·48	3·01	4·47	1·23	3·24	...	3·10	60	...	...	
	18-11-48	...	...	...	...	...	...	3·50	56	394	54·1	Died.
8. C. J. ...	30-11-48	6·60	2·76	3·84	...	...	10·96	3·40	62	122	...	Left against medical advice.
	9-12-48	...	...	...	...	...		3·61	70	...	...	
9. B. H. ...	8- 8-48	8·15	4·98	3·17	...	...	...	3·01	50	...	...	
	2- 9-49	5·58	1·97	3·61	...	...	26·53	3·52	58	...	...	
	16- 9-48	...	...	...	...	...	...	3·31	52	...	...	
	22- 9-49	6·10	2·30	3·80	...	...	...	3·49	60	912	...	Died.
	11-10-49	6·85	2·85	4·00	...	...	...	3·60	54	...	...	
	28-10-49	6·79	2·99	3·80	...	...	...	3·84	52	...	...	

TABLE 3—*Contd.*

Case No. and Name	Date	Total proteins in gms. per 100 c.c.	Total albumin	Total globulin	Total euglobulin	Total pseudoglobulin	Blood choline in gms.	R. B. C. × 106	Hæmoglobin %	Total amount of ascitic fluid drawn in ozs.	Total amount of proteins lost in ascitic fluid in gms.	Remarks
10. D. N. ...	25- 5-50	...	...	...	...	...	...	2·20	39	336	...	Left against medical advice.
	3- 6-50	6·46	1·93	4·53	...	...	...	2·02	40	...	...	
11. T. D. ...	9- 6-50	6·56	2·72	3·84	...	...	...	2·39	66	...	...	
	26- 6-50	6·50	2·60	3·90	...	...	...	2·42	68	...	...	
	10- 7-50	6·80	...	...	...	...	...	2·50	68	1390	...	
	30- 7-50	6·60	...	...	...	...		2·80	70	...	...	
	18- 8-50	6·40	2·60	3·80	...	...	...	3·00	72	...	...	
12. D. B. ...	10- 3-51	6·00	0·40	5·60	...	...	...	3·40	72	...	...	
	30- 3-51	6·10	...	...	...	...	...	3·60	74	...	...	
	15- 4-51	6·30	...	...	...	...	...	3·75	76	3098	...	Died.
	15- 5-51	6·20	0·60	5·60	...	...	...	4·10	80	+	...	
	30- 5-51	6·00	0·40	5·60	...	...	...	3·82	76	580 ozs. (aspirated from chest)	...	
	15- 6-51	6·50	0·60	5·90	...	...	...	3·25	70			

TABLE 4—SHOWING THE MEAN VALUES, BEFORE AND AFTER TREATMENT, OF TOTAL PROTEIN, ALBUMIN, GLOBULIN, EUGLOBULIN AND PSEUDOGLOBULIN—ALSO THEIR MAXIMUM AND MINIMUM VALUES

Group	Mean value of total proteins in gm. per cent. Before-after treatment (maximum and minimum values)	Mean value of total albumin. Before-after treatment (maximum and minimum values)	Mean value of total globulin. Before-after treatment (maximum and minimum values)	Mean value of total euglobulin. Before-after treatment (maximum and minimum values)	Mean value of total pseudoglobulin. Before-after treatment (maximum and minimum values)
Group 1. Cases clinically cured (15 cases)	5·84—7·50 (10·52—3·46)	1·99—3·29 (4·60—0·87)	3·65—4·21 (8·19—1·98)	1·15—0·90 (2·06—0·31)	1·98—2·59 (4·33—1·29)
Group 2. Cases improved (10 cases)	6·47—6·31 (8·78—4·05)	2·24—2·63 (4·05—1·40)	4·09—3·67 (6·04—2·07)	1·73—1·27 (2·92—0·39)	2·70—2·63 (4·40—1·15)
Group 3. Cases that died (7 cases)	6·29—6·24 (8·15—4·36)	2·25—1·68 (4·98—0·40)	4·03—4·59 (5·90—2·10)	1·83—1·93 (2·33—1·93)	2·67—2·81 (3·18—1·94)

Total blood counts—Except in four cases, where the blood count was below 2 million red blood cells, the blood count was well above 2 million and showed a progressive increase as the case was treated, the hæmoglobin values corresponded to red blood cell counts and also improved accordingly. In group I—clinically cured cases—the average initial R.B.C. count was 2·92 million and after treatment it was 4·12 million In group 2—cases which improved—the average initial R.B.C. count was 2·47 million and after treatment it was 3·61 million while in the last group the initial count was 3·15 million and final 3·21.

Marked anæmia was not a prominent clinical feature of these cases. No abnormality was noticed in white blood cell total and differential counts. Bleeding and coagulation times were estimated in 19 cases, average bleeding time was 3 minutes and 7 seconds and coagulation time was 5 minutes and 20 seconds, which does not show any abnormality.

Icteric index was estimated in 11 cases and was within normal limits except in 3 cases, who had developed jaundice during their stay in the hospital. In one case the icteric index went down from 118 to 18 as the jaundice disappeared, in another the jaundice was terminal and the patient died.

Urine was normal in all cases except five, which showed slight trace of albumin.

The examination of stools was also negative except in two cases, one showed round worm ova and another showed cysts of entamœba histolytica, for which adequate treatment was given.

The Wassermann reaction was positive in only two cases. The blood-urea was estimated 7 times and was found to be in normal limits. The blood cholesterol was estimated in 7 cases, 23 times, the mean value was 41·5 mgm. per 100 c.c., the minimum being 53 mgm. and maximum 385 mgm.

Programme of Therapy

In addition to the ordinary non-vegetarian hospital diet, in order to increase the protein content of the diet milk powder 1 to 2 ozs. mixed with milk was given three times a day, also 18 ozs. of 5 per cent casein hydrolysate (made in Haffkine Institute) was given thrice a day by mouth in divided doses, also 12 to 24 yeast tablets (6 to 12 gm. of brewers' yeast), 3 tablets of vitamin C (150 mgm.) and 4 tablets of nicotinic acid (200 mgm.) were given daily. In addition to this 2 c.c. of crude liver extract and 1 c.c. of vitamin B complex were injected intramuscularly on alternate days. The caloric value of the diet varied to a certain extent with the capacity of the patient to take food, on an average. It ranged from nearly 3,000 to 3,400 calories. The amount of protein varied from 150 gm. to 170 gm., carbohydrate about 400 gm. and fat about 70 gm.

Specific adjuvants—Methionin in the form of tablets and intravenous injections—2 gm. per day has been tried in five cases. But on account of the high cost they could be tried for a short time only. In two cases intravenous methionin injections seemed to help a lot in the recovery of the patients.

Discussion

In the last ten years considerable work has been done both from the point of view of pathogenesis and treatment of cirrhosis of the liver. Though this condition is fairly common in India, only recently more attention has been paid to this problem by various workers. In this study an attempt has been made to study the changes in the total proteins and its fractions by periodical estimations and to note the effect of high protein diet on the course of disease.

A close perusal of the values of the protein fractions in these cases during treatment showed that there is a progressive increase in the serum albumin values, which initially started with low values. In the first group (clinically cured cases) the serum albumin value finally went up to nearly 3 gm. or above, almost similar values were found in the second group (improved cases) except that the increase in serum albumin value was not to the same degree as that in the first group (Table 4). This being the most constant and characteristic finding and the increasing values of the serum albumin, were a good measure of the patients' clinical improvement. It usually took some months before definite improvement was established. The initial total protein values in group 1 were below 6 gm. in 8 cases (53·3 per cent) and 6 gm. or above in 7 cases (46·7 per cent) and on treatment the total proteins increased in all cases except one in which though the total albumin increased, the total proteins were diminished. In the cases in other groups the changes in total proteins were not constant.

The changes in total globulin values in all the cases were also not constant, in some they increased and in some they decreased and even this did not run parallel to changes in the total serum protein values but in most cases they were higher than normal. The euglobulin and pseudoglobulin values varied considerably and no definite conclusions could be drawn. In the cases that died the serum albumin values were lower than the other two groups and in most cases they went down as the patient deteriorated.

The findings here reported are in agreement with those of other workers (Post and Patek, 1942 and Ricketts, 1951).

Ricketts (1951) mentions that in 75 per cent of his cases chronic alcoholism was the most frequent cause of portal cirrhosis, in this series of cases it was an important cause in 54 per cent of cases. So was malaria an equally important cause. It has been noticed that some of these cases though they went out clinically cured, came back after some months, with ascites, because of either again taking to alcohol or suffering from further frequent attacks of malaria and their inability to continue with a nutritious diet and vitamin B complex in the form of brewers' yeast. But on further treatment they again improved.

Both alcohol and malaria as ætiological factors have been disputed by many workers in India and outside, yet clinically there was an impression that they were important ætiological or antecedent factors.

Straus *et al.* (1951) working in Java on histological aspects came to this belief that the tropical hepatic cirrhosis may be due to a double ætiology, malnutrition and virus infection; for, while in otherwise normal livers there was recovery of liver structure in nonfatal hepatitis, in malnourished ones there was a tendency to deflect healing process in the direction of Laennec's cirrhosis.

Davis (1949) in summarising the present position said that it was likely that cirrhosis may result from the combined action of a nutritional and of a toxic or infective factor, either of which might be ineffective acting independently.

The accepted guiding principles in treating a case of portal cirrhosis with ascites is to prevent further injury to liver by toxic or infective factors like alcohol, malaria, dysentery etc., to help in the regeneration of liver parenchyma, to improve the general nutrition of the patient and to correct the tendency to retention of water and salt in the body.

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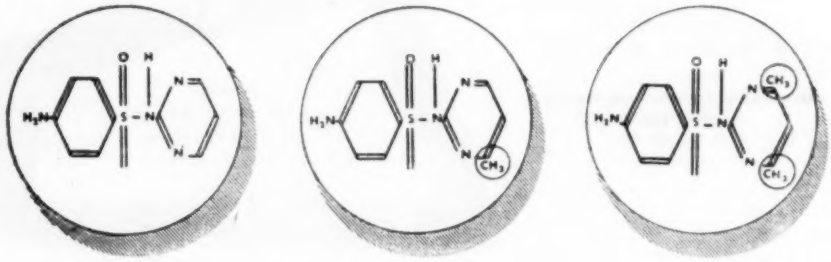

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Infusions of plasma albumin and salt-poor albumin infusions have been advocated by several workers.

Recently, emphasis has been laid on the restriction of salt intake, it has been reported that there is a tendency to retention of sodium in portal cirrhosis, which appears to depend on increased reabsorption of sodium in the tubules of the kidney (Layne and Schemm, 1947; Ricketts, 1951).

New ideas about the pathology of ascites in cirrhosis are being put forward. The clinical concept that the ascites results from portal hypertension and hypoalbuminæmia, may not be quite correct. It is suggested that a disturbance in sodium metabolism may be a primary factor, probably the sodium metabolism disturbance is associated with overactivity of "11-desoxycorticosterone-like" hormones. Eisenmenger and Kark in proceedings of the second A.C.T.H. clinical conference (1951 Philadelphia) have reported an abnormally high urinary excretion of cortical hormones in cases of cirrhosis with ascites. The cause may lie in a failure of the liver to detoxify the mineral retaining adrenal hormones of the blood stream or in excessive secretion by the adrenals. This provides a rational basis for the use of low sodium and high protein diet in the management of cirrhotic patients with ascites (Annotation *Lancet*, 1951). In a recent paper (Kark, 1951) gives details regarding diet recipes and low sodium food; he also mentions some of the hazards of sodium restriction.

In some of the cases reported here salt-free diet was given but our patients are not inclined to persist with a salt-free diet, as the Indian diet becomes extremely unpalatable. Perhaps this will in near future be not necessary as it has been shown that by feeding patients with an appropriate dose of ionic exchange resin the sodium ions are excreted in the stools in combination with the insoluble resins.

Summary

1. Clinical data of 37 patients with cirrhosis of the liver with ascites treated with a highly nutritious diet, supplemented with milk powder, brewers' yeast and casein hydrolysate are given. After treatment 15 (43 per cent) were clinically cured, 10 (27 per cent) showed fair improvement and 7 (19 per cent) died, 3 (8 per cent) showed no improvement and 2 cases stayed less than 15 days and no conclusions could be drawn.

2. Progressive increase in the serum-albumin values were a good measure of a patient's clinical improvement.

3. The significance of alcohol, malaria and dysentery as ætiological or antecedent factors is discussed.

4. Modern views on the importance of salt retention and salt-free diet in the treatment of ascites are discussed.

Acknowledgment

My thanks are due to Dr. M. V. Radhakrishna Rao, for his collaboration and help in this study, to Mr. K. K. Govind, a member of his staff, who is solely responsible for the various blood protein and choline estimations and also for his help with the references.

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PULMONARY AMOEBIASIS*

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In amœbiasis, pulmonary involvement is a recognized complication; yet, it is considered, a distinct rarity. The rarity of incidence, however, is more apparent than real; because many such cases escape detection or are passed off as cases of unresolved pneumonia, lung abscess or basal pulmonary tuberculosis.

Review of Literature

Rogers, quoted by Bookless (1950), in making postmortem examination on 81 liver abscess cases, detected secondary lung abscess in 26, all of which remained clinically undetectable: Choudhury (1946) reported 2 cases. In his first case, sputum did not show entamœba; liver was not palpable and there was distinct leucocytosis; the diagnosis of pulmonary amœbiasis was made because the right middle zonal lesion disappeared with emetine. The second case showed entamœba in the sputum, but no

* Paper read at Medical College Re Union.

lesion in the lung was demonstrable clinically or radiologically. Dormer and Friedlander (1941) reported 7 cases. In all these cases, diagnosis was dependent upon a clinical response and disappearance of radiological opacity in the right lower zone with emetine. Menica's case (1944) consisted of a soft shadow in right apex. Sputum revealed *Entamœba histolytica*. A case of multiple abscess of the lung was reported by Chatterjee and Sen Gupta (1949) Diagnosis in these cases was based on demonstration of entamœba in the sputum. Mukherjee (1949) published a case of putrid lung abscess. Ten cases were reported by Koszalka and others (1949). Bookless (1950) referred to 10 cases of a typical chest syndrome in patients with hepatic amœbiasis. Two cases were reported by Cooray (1942). In the majority of these cases, diagnosis was clinical and therapeutic and was not always supported by the demonstration of entamœba in the sputum. The case reports of Girgis (1939), Sherman and Weinberger (1941), Zaky (1943), Hughes and Westfabull (1947), Applebaum and Frenkel (1944) and report of 153 cases of pleuropulmonary complications by Ochsner and Bailey (1936) as also case reports of Putney and Baker (1938) and Broc (1932) were not available to the author.

Clinical Manifestations

Clinical varieties—Clinically pulmonary amœbiasis is divisible under three catagories, depending upon whether lung tissue proper is actually invaded or not and on the source of invasion. Thus, it has been classified as—(*a*) symptomatic, (*b*) secondary and (*c*) primary pulmonary variety. The exact mode of invasion of lung tissue by *Entamœba histolytica* is not definitely known. The liver has been held to be the chief portal of entry of infection and from it entamœba has been supposed to reach the lung substance in one of the three ways, *e.g.*, (*a*) by a process of continuous and contiguous spread through the diaphragm, (*b*) by transdiaphragmatic lymphatic spread, (*c*) by veno-arterial carriage from the liver to the lung ; the infecting agents avoiding the capillaries, gain direct entrance to the hepatic veins and thence to the right chambers of the heart and through the pulmonary arteries to the lung fields. This is the mode of spread in secondary variety. In primary variety on the other hand, in the absence of obvious hepatitis or liver abscess, infection has been supposed to reach lung substance from a colonic ulcer by embolism.

In symptomatic variety, actual lung tissue involvement does not occur and therefore, is not demonstrable radiologically. The febrile manifestations, chest pain and irritable cough appear to be due to basal pleural involvement. In some cases, pleural rub may be heard. This, when present, and the other symptoms disappear completely with specific anti-amœbic treatment. It has been suggested that 15-25 per cent of patients with hepatic amœbiasis present such thoracic complaints.

In secondary pulmonary variety, the clinical condition is one of basal involvement of the right side of the chest. It is radiologically characterized by a triangular pneumonic opacity supradiaphragmatic in position, often juxtaposed to it and tapering towards the hilum. Alternatively, the radiological appearance may present the picture of a basally situated abscess cavity. In either case, the dome of the diaphragm may show a pointed projection or a humped appearance.

In primary pulmonary variety, as has been stated earlier, the liver is not the portal of entry of infection to lung and therefore hepatitis with or without abscess formation is not evident clinically: for a similar reason, the radiological findings need not be localized to the basal area and may be situated away from the diaphragm. The homogeneous opacities in such cases, therefore, present a more closer resemblance to pulmonary tuberculosis: further, because of embolic origin abscess cavities are multiple and hence require a closer differentiation from other embolic abscess cavities.

Diagnosis

To sum up, diagnosis of pulmonary amœbiasis is dependent upon a consideration of:—

(*a*) A clinical history of a relatively short course of illness, presenting usually a non-toxic appearance.

(*b*) Chest complaints, with pain, pointing chiefly to the right side of the chest, with clinical evidence in most cases of involvement of right lower zone.

(*c*) Associated evidence, clinical or radiological of some degree of hepatitis or of liver abscess.

(*d*) A radiological evidence of involvement of the right lower zone, usually supradiaphragmatic in position and often juxtaposed to it; the appearance chiefly presenting the form of a triangular pneumonic opacity with or without areas of breakdown in it or suggestive of a basal lung abscess.

In cases where clinical evidences point to a diagnosis of pulmonary amœbiasis, sputum should be searched carefully and diligently for motile entamœba, immediately after expectoration, mounted in normal saline, as its presence makes the diagnosis absolutely certain; but it should be remembered that it may not be so readily seen even after a very careful and painstaking search. In the present series, entamœba could be detected in 7 out of 12 cases.

In blood-count, no characteristic blood picture is to be expected. Moreover, moderate leucocytosis is not altogether incompatible with a diagnosis of pulmonary amœbiasis, as secondary infection can readily occur: further, it is to be noted that examination of stool, has a very limited place in the diagnoses of

pulmonary amœbiasis, since its absence does not contra-indicate a diagnosis of pulmonary involvement just as its presence does not readily confirm a pulmonary lesion in a given case to be of amœbic origin.

Differential Diagnosis

In those cases where sputum does not reveal entamœba, a differentiation from atypical group of pneumonias, chiefly virus pneumonia is necessary. In our series in such cases, diagnosis of pulmonary amœbiasis was entertained in preference to virus pneumonia because of the following facts:—(1) Virus pneumonia usually occurs in epidemics ; in our series, cases were sporadic. (2) Secondly, virus pneumonia presents varied grades of severity and fatalities are not uncommon. High fever, dyspnœa, cyanosis, nervous prostration and circulatory depression occur in majority of cases; in our series, toxæmia was conspicuous by their absence and all patients were ambulant. (3) Pathologically, lesions in virus pneumonia are perihilar in origin with a fanfare spread; further infiltrational or pneumonic opacities have not got any special predilection for any particular lobe of the lung; in our cases, lesions were characterized by right lower zonal involvement and were neither bilateral nor haphazard in distribution. (4) Spontaneous remissions may occur in virus pneumonia, but the average course is about 3-6 weeks; our cases made complete recovery in 2-3 weeks' time. (5) Virus pneumonia does not respond to any known drug except to aureomycin in some cases ; our cases responded dramatically to emetine or chloroquine: further, even though a full course of treatment required 2-3 weeks' time, clinical response was quite evident in 4-6 days.

Treatment

Patients in our series, were treated either with emetine or with chloroquine group of drugs. Patients receiving emetine therapy had 15 grains in 21 days. There was hardly any intolerance even with this high dosage, but some cases complained of extreme weakness during the course of treatment which necessitated a change over to chloroquine. In cases where only chloroquine, was given a total of 36 tablets were used: In 4 divided doses in the first 4 days and then 300 mgm. daily in 2 divided doses for the next 10 days. Clinical response to chloroquine was appreciable earlier and was more complete than with emetine. Further, it obviated the necessity of a heavy dosage with emetine. With chloroquine, however, some patients complained of nausea, vomiting, giddiness, fainting, disturbed vision and an uneasy chest sensation which, however, subsided on temporary withdrawal of the drug.

Analysis of Material Under Review

In an earlier communication 6 cases of pulmonary amœbiasis were reported by me. Eight cases are awaiting publication. Report of further twelve cases are furnished in a tabular form (Table 1).

A glimpse at Table 1 would show that the majority of the patients were adults; one was a child and another, a man of advanced age. Excepting one, all the patients were males. Duration of illness was rather short; it varied from a week to 3 months. None of the patients presented the picture of an acute febrile state with marked constitutional symptoms; rather the clinical status was characterized by lack of appreciable toxæmia; fever usually was of the low grade type without conformity to a set regular pattern. Some of the patients were even afebrile, when they reported for treatment. Troublesome cough, productive of some thick viscid, non-purulent, non-offensive sputum was one of the main symptoms. Foul, copious expectoration was present in only 2 cases: frank hæmoptysis was absent, but blood-tinged sputum was present in 3 cases. The chief complaint and the presenting symptom in almost all the cases was pain in the lower part of the right side of the chest of varying severity This, together with the evidence of right lower zonal involvement and evidence of some degree of hepatitis formed the characteristic clinical picture. An accompanying irregularity of bowel did not form an essential part of clinical symptomatology.

The blood count, sputum and stool examination reports are shown in Table 2.

From Table 2 it would be apparent that the blood picture was neither constant nor characteristic: only some cases showed moderate leucocytosis with polymorphocytosis. As pointed out earlier, copious, offensive, fishy sputum was rather unusual and was found in only 2 cases. A saline suspension of sputum, examined immediately after coughing, yielded positive results in 7 out of 12 cases. It was rather interesting to find motile entamœba in cases where radiological finding was scanty. In examination of stool, entamœba are so frequently met with even in apparently normal individuals, that no clinical importance can be attached to these in the assessment of our cases.

The radiological appearances have been summarized in Table 3.

It is obvious from Table 3 that the typical radiological appearance of the right lower zonal pneumonic opacity was seen in only 5 cases. In Cases 2, 3 and 10, there was patchy involvement of the left lung in addition. Further, in Cases 2 and 3, it was the left dome of the diaphragm which presented apical pointing' perhaps pulmonary affection was initiated from the left lobe of the liver. In Case 11, opacity was at the cardiophrenic angle which merged on to cardiac border without alteration of the diaphragmatic leaf. Case 1 simulated right upper zonal lung abscess. Cases 8 and 12 deserve special notice since in these 2 cases, though sputum showed entamœba no pulmonary lesion was found radiologically.

TABLE I—SHOWING THE SALIENT CLINICAL FEATURES OF THE CASES

					Present Illness							*Past History*				
Case No.	*Name*	*Age in years*	*Sex*	*Caste*	*Duration of Present illness*	*Fever*	*Constitutional symptoms*	*Chest pain*	*Cough*	*Expectoration, its nature*	*Hæmoptysis*	*Chest finding*	*Associated enlarged & tender liver*	*Associated ntestinal disorder*	*Chronic or recurrent intestinal disorder*	*Emetine therapy in past*	*Notable respiratory disorder*
1	S.C.S.	36	M.	H.	15 days	Low grade (intermittent)	Mild	+	Troublesome	6-8 ounces per day offensive fishy greyish red	Streaks of blood at times	Distant high bronchial breath sound with medium rales in rt. upper zone anteriorly	One finger. Tender	Nil	Not complained of	Nil	Nil
2	A. S.	38	M.	H.	15 days	Lowgrade Irregularity intermittent	Mild	+ (Left side).	Troublesome	3-4 ounces per day, thick, non-puruent, non-offensive	Nil	High bronchial breath sounds with few rales in rt. infraclavicular zone peripherally. Rhonchi and scattered rales in rt. lower zone. Breath sounds diminished lt. base.	2 fingers tender	Nil	Not complained of	3 yrs. of emetine—2½ years ago for hepatitis	Nil
3	S.K.D.	22	M.	H.	2 months	Sharp rise of high fever with chill & rigor at night 2 months ago ; fever with remittent variation lasted 1½ month, remitted completely 4 days persisting as low grade irregular pyrexia since	+ Towards earlier part	+	+	2-3 ounces per day at commencement, scantier later	Nil	Deficient breath sound with pleural rub in rt. lower zone	Nil	Dysenteric motions for 3 weeks towards earlier part (untreated).	Not complained of	Nil	Nil
4	A. J.	8	M.	M.	2 months	Low grade fever with irregular variation—10 days. Afebrile 2 days : Irregular low grade fever 5 weeks. Afebrile since	Nil	+	+	Scanty, thick, mucoid	Nil	Deficient breath sounds with few rales in right lower zone	2½ fingers Tender	Acute dysenteric motions 30-40 times a day for 5 days during earlier part. (Untreated)	Not complained of	Nil	Nil

FIG. 1—Case 1

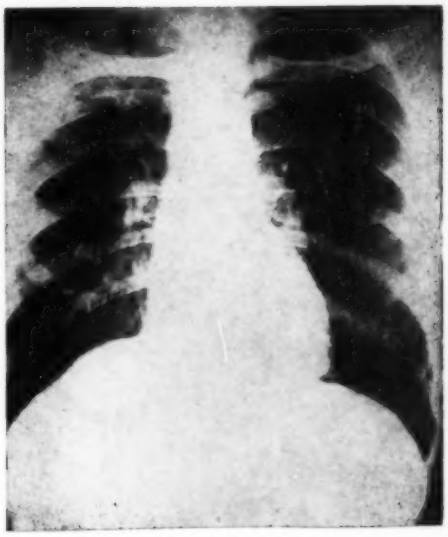

FIG. 2—Case 1

FIG. 3—Case 2

FIG. 4—Case 2

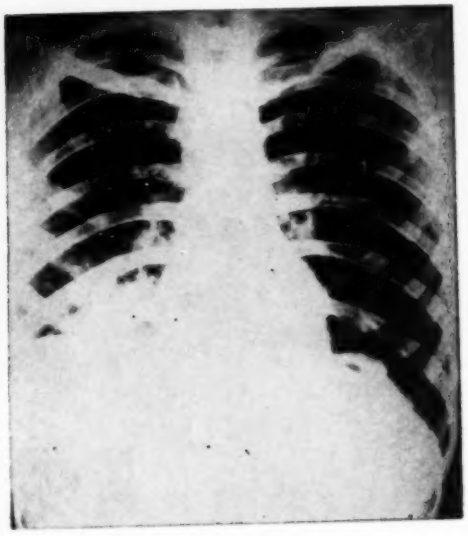

FIG. 5—Case 3

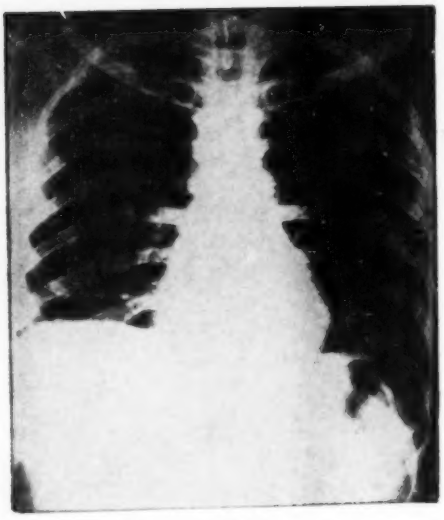

FIG. 6—Case 3

FIG. 7—Case 4

FIG. 8—Case 4

TABLE I—*Contd.*

Case No.	Name	Age in years	Sex	Caste	Present Illness								Past History				
					Duration of Present illness	Fever	Constitutional symptoms	Chest pain	Cough	Expectoration, its nature	Hæmoptysis	Chest finding	Associated enlarged & tender liver	Associated intestinal disorder	Chronic or recurrent intestinal disorder	Emetine therapy in past	Notable respiratory disorder
5	P. D.	28	F.	H.	3 months	High grade. intermittent irregular— 1 month Apyrexial— 1 month Constant low grade fever— 1 month	Mild	++	Troublesome	2-3 ounces: Thick, mucoid	Nil	Distant bronchial breath sounds with medium and coarse crepitations in rt midaxillary region. Air entry weak in rt. mid and lower zones anteriorly & posteriorly.	Nil	Nil	Acute dysentery 4 months ago	Nil	A short course of fever with pain— chest rt. side— 8 months ago
6	N.C.K.	36	M.	H.	15 days	Sudden onset of high fever with chill with remittent variation lasting 1 week: afebrile since.	Mild	+	Not complained of	Scanty, mucoid	Nil	Deficient air entry with pleural rub in right lower zone. Breath sounds diminished in middle (rt.) anteriorly and laterally.	2 fingers Tender	Nil	Not complained of	Nil	Dry pleurisy (rt) 20 yrs. ago. Stitchy pain off & on since
7	S.C.R.	36	M.	H.	7 days	Low grade.	Mild	Nil	+	Scanty. Offensive	Nil	Deficient air entry in rt. lower zone.	One and half finger Tender	Nil	Not complained of	Nil	Injury rt. side of chest 10 yrs. ago Hæmoptysis 7 yrs. ago
8	J.M.B.	64	M.	H.	9 days	High grade (remittent variation)	++	++ (Left side)	+	Scanty. Highly offensive.	+	Pleural rub in left midaxillary zone. Air entry weak in left mid and lower zones. Plenty medium crepitations and rales in left lower zones. posteriorly	4 fingers Tender	Dysenteric motions associated	Chronic bowel irregularity 36 yrs.	6 grs. 7 years ago	Lobar pneumonia 6 yrs. ago

TABLE I—*Contd.*

					Present Illness									*Past History*			
Case No.	*Name*	*Age in years*	*Sex*	*Caste*	*Duration of Present illness*	*Fever*	*Constitutional symptoms*	*Chest pain*	*Cough*	*Expectoration, its nature*	*Hæmoptysis*	*Chest finding*	*Associated enlarged & tender liver*	*Associated intestinal disorder*	*Chronic or recurrent intestinal disorder*	*Emetine therapy in past*	*Notable respiratory disorder*
9	P H.M.	32	M.	H.	12 days	Low grade	Mild	+	+	Scanty mucoid, 3-4 ounces 5 days ago	Nil	Deficient air entry and plenty medium rales in rt. lower zone	2 finers Tender	Nil	Not complained of	Nil	Short bouts of febrile attacks with pain chest 2 yrs. ago & 16 yrs. ago
10	S K.M.	60	M.	H.	3 months	Low grade	Mild	Both sides: sometimes fleeting in character.	+	2-3 ounces Thick mucoid	Nil	Basal crepitations ieft lowe.r zone	Nil	Dysenteric motions towards the latter part of illness.	Dysenteric attacks 25-30 yrs.	Nil	Chronic susceptibility to cold 25 yrs.
11	K. G.	24	M.	H.	7 days	Malaise only, in 1st 3 days	Nil	+	+	Scanty mucoid	Streaks of blood at times	Pleural rub in rt. middle and lower zone	1 finger Tender	Nil	Not complained of	Nil	Nil
12	S.	20	M.	H.	7 days	Afebrile	Nil	+	++	Thick mucoid 2-3 ounces per day	Nil	Deficient air entry in rt. lower zone	Nil	Nil	Not complained of	Nil	Nil

FIG. 9—Case 5

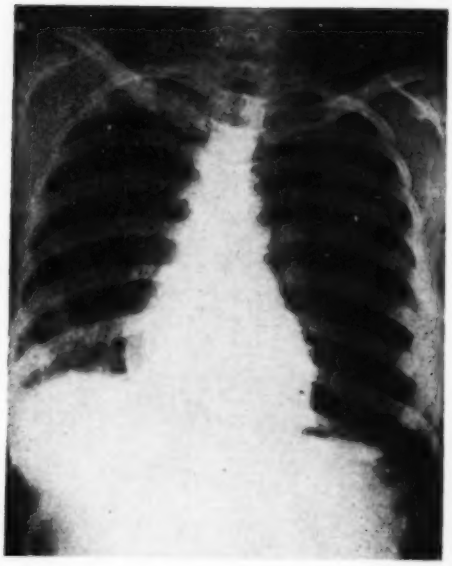

FIG. 10—Case 5

FIG. 11—Case 6

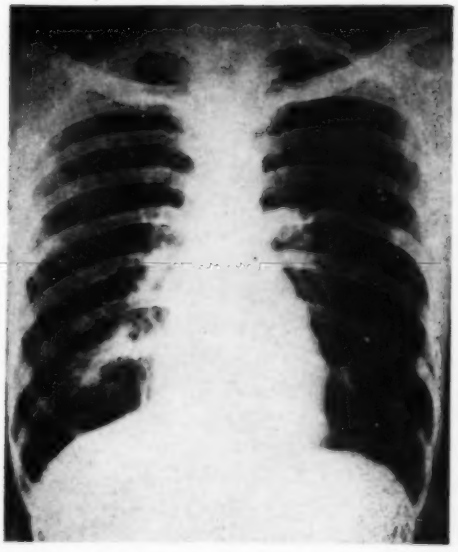

FIG. 12—Case 6

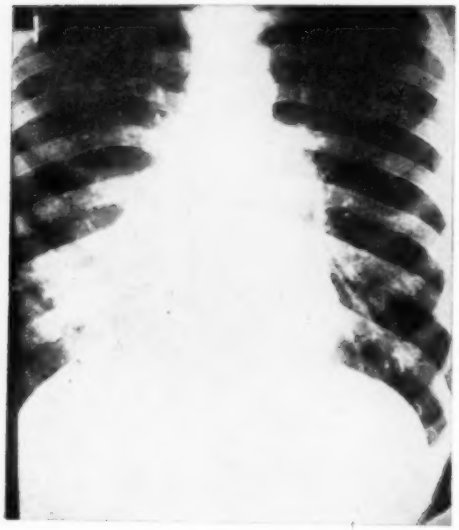

FIG. 13—Case 7

FIG. 14—Case 9 (Before Treatment)

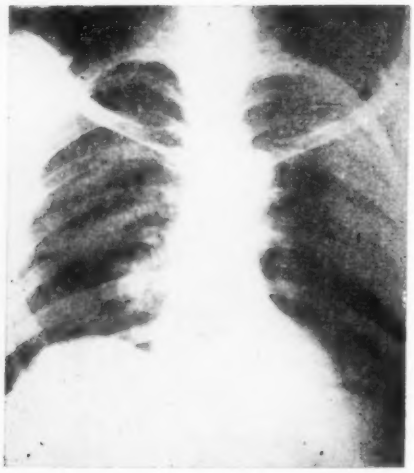

FIG. 15—Case 10 (Before Treatment)

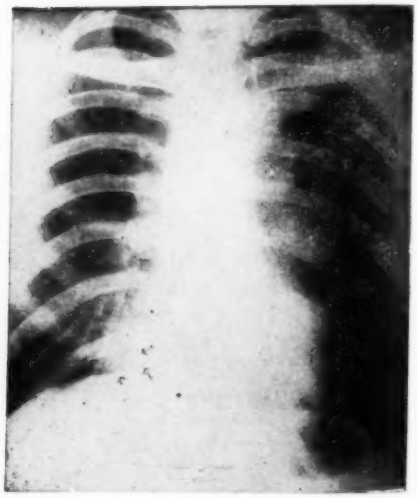

FIG. 16—Case 11 (Before Treatment)

TABLE 2—SHOWING THE LABORATORY REPORTS OF BLOOD, SPUTUM AND STOOL

Case No.	Blood-count W.B.C./cm.	Poly.	Lympho.	Mono.	Eosino.	R.B.C./cm.	Hb. % Talquist's	Sputum Entamœba histolytica	Sputum No of pus cells	Sputum A.F.B.	Stool Ent. histolytica vegetative	Stool Ent. histolytica cystic
1.	8,750	74	22	1	3	4,325,000	70	Few (+)	Fair	Nil	Nil	Few
2.	16,000	85	13	0	0	3,250,000	65	Nil	,,	,,	,,	Nil
3.	8,500	82	17	0	1	3,750,000	65	+	Few	,,	Few	Few
4.	9,000	76	24	0	0	3,275,000	75	Nil	,,	,,	Nil	,,
5.	9,000	75	20	1	4	4,275,000	70	,,	,,	,,	,,	Nil
6.	9,275	80	14	2	4	5,150,000	76	,,	,,	,,	,,	,,
7.	8,200	72	28	0	0	3,250,000	65	,,	,,	,,	,,	Few
8.	(*a*)14,000	90	10	0	0	3,750,000	60	Few (+)	Fair	,,	Fair in number	Fair in number
	(*b*)17,400	94	6	0	0						Nil	Few
9.	6,450	64	30	0	6	3,625,000	65	+	,,	,,	,,	,,
10.	7,250	65	30	1	4	4,270,000	65	+	Few	,,	,,	Nil
11.	7,450	72	26	1	1	4,650,000	70	+	,,	,,	,,	,,
12.	6,000	64	28	2	6	4,370,000	70	+	Fair	,,	,,	,,

TABLE 3—SHOWING RADIOLOGICAL APPEARANCES BEFORE AND AFTER TREATMENT AND RESPONSE TO EMETINE OR CHLOROQUINE THERAPY

Case No.	Skiagram of chest before treatment	Therapy with emetine. (Total dose and duration of treatment)	Therapy with chloroquine (Total dose and duration of treatment)	Skiagram of chest after treatment	Result and Remarks
1.	A big abscess cavity in a bed of homogeneous pneumonic opacity in right infraclavicular zone. Right dome of diaphragm shows humping (Fig. 1, *vide* Plate)	15 grains in 21 days	30 tabs. in 16 days	No evidence of any abscess cavity: organization in the periphery (Fig. 2, *vide* Plate)	Both chloroquine and emetine had to be used. Procaine Penicillin 4 lacs for secondary infection.
2.	A big abscess cavity in right infraclavicular zone, a small cavity in left mid-zone. A homogeneous rounded opacity, perihilar in right mid-zone. Central pointing of left leaf of diaphragm with a supra-diaphragmatic rounded opacity (Fig. 3, *vide* Plate)	15 grains in 21 days	20 tabs. in 9 days	Complete disappearance of abscess cavity in right upper zone except a thin ring of scar tissue: complete disappearance of right midzonal and left lower zonal opacity. The left midzonal opacity persisted with no increase in diameter of the cavity but surrounded by dense homogeneous opacity (Fig. 4, *vide* Plate)	Besides emetine 4 lacs procaine penicillin was used. The persistent left zonal cavity disappeared with Nivaquine—20 tabs.
3.	Right basal supradiaphragmatic triangular pneumonic opacity with flattening of right dome: left dome showed a rounded prominence with small patchy opacity adjacent to it (Fig. 5, *vide* Plate)	15 grains in 24 days		Almost complete disappearance of the opacity except for a slight peripheral haze (Fig. 6, *vide* Plate)	Received 22 gms. of Streptomycin on an assumed diagnosis of basal pulmonary tuberculosis, elsewhere.
4.	Almost homogeneous opacity with irregular denser areas in it; Right basal, supradiaphragmatic and lower zonal (Fig. 7, *vide* Plate)	½ grain daily, 12 days		Almost complete disappearance of the opacity except for very fine mottlings (Fig. 8, *vide* Plate)	
5.	A pneumonic patch of opacity with evidence of breakdown in its upper central part, covering a considerable portion of right lower zone (Fig. 9, *vide* Plate)	15 grains in 21 days		Considerable clear up of opacity. Persistence of blotchy opacity at periphery with a pleural haze (Fig. 10, *vide* Plate)	Pleural rub persisted for a long time afterwards.

TABLE 3—*Contd.*

Case No.	*Skiagram of chest before treatment*	*Therapy with emetine. (Total dose and duration of treatment)*	*Therapy with chloroquine (Total dose and duration of treatment)*	*Skiagram of chest after treatment*	*Result and Remarks*
6.	A triangular pneumonic opacity with apex pointing towards the hilum; the other end tailing off to the central point of diaphragm (Fig. 11, *vide* Plate) ...	15 grains in 21 days		Evidence of healing by fibrosis (Fig. 12, *vide* Plate)	
7.	An almost homogeneous pneumonic opacity in right lower zone, merging with the diaphragm and cardiac shadow and tapering towards the hilum. The diaphragmatic leap appears discontinuous (Fig. 13, *vide* Plate)	15 grains in 21 days			Responded very well clinically. Skiagram after treatment was not possible.
8.	Skiagram was suggestive of bronchogenic carcinoma at apex of left lower lobe (later proved): The right dome of diaphragm showed a very prominent central bulging but no pulmonary shadow adjacent to it ...	1 grain—1st day ½ grain—4 days	20 tabs. in 10 days		Responded very well clinically. Later died apparently of carcinomatous metastasis in brain.
9.	Raised right dome of diaphragm. Small area of opacity adjacent to central part of diaphragm (Fig. 14, *vide* Plate)		36 tabs. in 14 days	Absolute clear up of original opacity	
10.	Humped appearance of right dome of diaphragm—few basal central mottlings and a patch of opacity in perihilar area in right lower zone: a small opacity is also seen at left cardiophrenic angle area (Fig. 15, *vide* Plate)		36 tabs. in 14 days	Absolute clear up of all opacities	
11.	Opacity at right cardiophrenic angle (Fig. 16, *vide* Plate)		36 tabs. in 14 days	Absolute clear up of all opacities	
12.	No obvious pulmonary lesion detectable ...		36 tabs. in 14 days		Response is clinical.

SUMMARY

(1) Report of 12 cases of pulmonary amœbiasis has been presented. Case 1 and probably 2 also, may be considered to belong to the primary variety, the rest belonging to the secondary variety.

(2) In 7 out of 12 cases, diagnosis was confirmed by presence of entamœba in the sputum. In the remaining cases, diagnosis was dependent upon clinical considerations as discussed earlier and on therapeutic response to anti-amœbicidals.

(3) All the patients responded very favourably clinically as also radiologically: Chloroquine was found to be a better drug compared to emetine, which required a very high dosage; yet the response was not thoroughly complete. The toxic symptoms met with, with chloroquine therapy have been mentioned.

(4) The varieties of radiological responses met with, besides the recognized one, in our series, have been pointed out.

(5) In the sputum-negative cases, points of differentiation from virus pneumonia have been stated. Literature on the pulmonary amœbiasis, so far as is available, has been briefly reviewed.

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Conclusion

In a case, with a rather short clinical history, presenting evidence of right lower zonal involvement, in association with a palpable tender liver, sputum should be searched for entamœba in a very fresh specimen. Even in its absence a therapeutic trial of chloroquine or emetine is justified. A satisfactory clinical response, should help in establishing diagnosis in such cases.

Acknowledgment

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TUMOURS OF THE NECK
With Special Reference to Cervical Adenitis of Tuberculous Origin

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This paper is based on the work done by the author and his associates at Rajahmundry during the last sixteen months.

The amount of clinical material available is surprisingly large and representative as can be seen from the variety of tumours that were enucleated.

It has been possible to subject every one of these tumours to pathological examination.

Analysis of the Cases Reviewed

Out of a total of 25 neck cases, 17 were cases of tubercular adenitis. Of the remaining—

One was a case of Hurthle cell tumour in a boy aged 10 years.

Another was a case again of Hurthle cell tumour but showing a tendency for malignancy in a woman aged 40 years.

Incidentally it may be mentioned that Hurthle cell tumours of the thyroid, were not reported from this part of the country. Dr. Govinda Reddy, Professor of Pathology, Madras Medical College, preserved them in the Madras Medical College Museum, and he wrote to us that they are uncommon tumours and that the specimens are of a very high standard. He wished to keep them in the museum with full clinical history.

Another case is one of goitre showing toxic changes histologically but without any evidence of toxicity clinically.

Another is a case of fœtal adenoma.

One is a typical parabuccal tumour, the so-called mixed parotid tumour.

One is a case of Hodgkin's lymphadenopathy in a girl aged 8 years.

There was a case of lymphosarcoma of the neck glands, and a case of malignant papilloma. These last two malignant cases had to be operated upon only to relieve pressure symptoms.

Of the seventeen cases of tubercular adenitis, many involved the group of glands in the jugulo-digastric triangle. Some were involving the chain of glands in the posterior triangle and some were involving the chain of glands in the anterior triangle. A few involved the submaxillary lymph nodes. In short, the cases under review involved various triangles of the neck either alone or in combination.

Treatment

Diverse views have been held on the treatment of cervical adenitis, some preferring conservative and others operative methods. Like the treatment of chronic peptic ulcer and that of thyrotoxicosis the pendulum swing from medical to surgical treatment, back to medicine and once again to surgery; and, of late, the surgical treatment of tubercular cervical adenitis is fairly standardised, especially in Scotland and North of England ; but time-consuming clock dissections, flaps and incisions similar to those used for eradication of secondary malignant deposits in the neck are now given up in the treatment of tubercular adenitis.

Satisfactory results and quick rehabilitation can be achieved by modifying the older block dissection to thorough local extirpation through incisions following the creases of the neck and combining surgery with practical general treatment. The benefits of operative intervention by well-performed operations in cases of

localized lesions have proved a boon to sufferers. Quick treatment and early rehabilitation means a lot to a bread winner in which case he need not be a burden, perhaps, to an already burdened family. Protracted conservative treatment is a burden to the state in the long run.

Tubercular cervical nodes left to themselves may caseate and break down and evacuate themselves by sinus formation and the sinuses may even heal by nature's intention under favourable conditions. If at all this happens in some lucky cases, it takes a long long time and these scars are ugly and not half so good as those resulting from the use of a scalpel.

Immobilizing the neck by plaster of paris for months and months is cumbersome. This may be indicated in cases where surgery is contra-indicated for some reason or other.

Contra-indications for surgery—Broadly speaking, they may be classified under four headings.

1. If infection is a widespread process, organisms being carried in the lymph or blood stream from a focus in the lungs or mediastinal glands, conservative treatment is indicated though operation may be done to evacuate a cold abscess.

2. Operative treatment is contra-indicated where more than one group of glands in different parts of the body are involved or groups of a typical distribution are involved or where the general health is poor and signs of tubercular toxæmia are present.

3. Operative treatment is also inadvisable in florid infections in young infants and in elderly patients where the glands are fixed by extensive periadenitis and are involved in cold abscess formation.

4. Aspiration or curettage in the average case is to be deprecated, it may be done only if specially indicated. Volkmann designed his spoon for scraping away necrotic pieces of bone. Atkinson says to scrape blindly down a fistula in the neck is not only inefficient surgery but also dangerous. It produces induration of the tissues around and sometimes dismays even a seasoned dissector. Curettage is not divorced from the disaster of disseminating tubercle bacilli and death may sometimes follow the procedure. To scrape the soft tissues especially in the neck is the antithesis of the highest canons of surgery.

Indications for surgery—Before one discusses the indications for surgery, it is well to consider for a moment the portals of entry of the tubercle bacilli into the cervical nodes.

In the order of frequency, tonsils, adenoids and infected teeth are the main portals by which tubercle bacilli enter the cervical lymphatic system. The jugulodigastric group of glands gets the infection from the tonsil, the glands in the posterior triangle, from the adenoids and the submaxillary area from the carious teeth.

1. If the infection occurs as a local process due to tubercle bacilli gaining access *via* the tonsils and spread thence to the jugulodigastric glands but no further, the rational line of treatment is to remove the glands and also the tonsils provided the infection is not an actively progressive one and provided the general health is satisfactory. As Hamilton Baily puts it, in the whole of surgical literature, there is not an adequate description of how to deal with each group of cervical nodes. The descriptions available concern the upper jugular chains with a few notes on how to deal with those in the posterior triangle. So, the surgeon should acquire an accurate knowledge of the anatomy of the neck by constant study and dissection before undertaking these operations. Then he can confidently work in any of the triangles of the neck and go down safely into any compartment of the deep cervical fascia. The surgeon should have some special training; those used to thyroid surgery can do very well indeed or a surgeon with a good knowledge of the anatomy of the neck can quickly become an adept, provided he has the time and patience to undertake the dissection. As one goes on with the dissection, he finds chains of glands which were not expected or perhaps could not be clinically felt. Thus, in these dissections application of time and patience is necessary. It is always more convenient and safe to make liberal incisions and only then while dissecting through them, the surgeon can treat the tissues with utmost gentleness.

Anæsthesia—Local anæsthesia in selected cases is very good indeed. The enlarged glands can easily be shelled out like nice little hen's eggs, if one goes to the proper depth of areolar tissue; the area being infiltrated with local anæsthetic, the glands present themselves for enucleation and the hardened tissue around need not be dissected out as in the case of malignant glands. But, there may be some induration beneath the scar but it soon disappears. It is always found that general anæsthesia is more comportable both for the patient and the surgeon. It is safe and the author's experience is that it does not bring in any post-operative complications. It has been also found that C_2E_3 mixture through intrapharyngeal tube is equally good if not better than the more elaborate intratracheal. The author had to standardise this method as he had no facilities for intratracheal method.

Pre-operative care—(1) In children, application of cod liver oil all over the body is recommended in addition to good food, milk and eggs as a preparatory measure.

(2) It is better to be sure that the lungs are clear, clinically and radiologically.

(3) Peri-adenitis is brought down by sulphonamides but a routine penicillin umbrella in every case is absolutely unneccessary, if the usual precautions of aseptic surgery are observed.

(4) In bilateral cases, the operation may be done in two sittings.

(5) It is preferable to do tonsillectomy 3 weeks after the operation because tonsillectomy due to flaring up of pyogenic organisms causes peri-adenitis or some times collar stud abscess in the jugulodigastric group of glands and though the infection may settle down in course of time, enucleation later on becomes less easy and the glands get adherent to the tissues and cannot be shelled out easily.

A case was demonstrated to illustrate the point; on the other hand the author reports of another case where tonsilectomy alone has done the trick. On this patient tonsilectomy was done first and he had to go back home due to some urgent unforeseen circumstances and it is lucky and surprising to see that the glands in the neck have gradually disappeared after tonsilectomy.

Operation—The dissection should be carried out with a knife and a Mayo scissors which are the most convenient instruments that could be thought of in resecting the tissues. The temptation to dislodge the nodes with fingers should be resisted. No antiseptic need be used. If necessary, frosting with sulphonamide by means of a bag may be done. As a routine, penicillin cover is unnecessary. In the experience of the author though perhaps limited, the results of operation are very satisfactory. Mortality is nil. The cases are being followed up. A cinemotograph was taken of the operation done by the author and his associates in the Government Hospital, Rajahmundry.

The following is a brief account of it.

The steps of the operation. THE FIRST STEP—Oblique incision lying in a crease over the mass of glands not less than 2 cms. below the angle of the jaw; it goes through platysma.

THE SECOND STEP—Flaps dissected upwards and downwards sufficiently to expose the whole carotid triangle. By reflecting the two layers as one, injury to the facial nerve is avoided.

THIRD STEP—External jugular vein may be divided. The great auricular nerve is retracted.

FOURTH STEP—The anterior border of the sternomastoid retract backwards, exposing the whole surface of the main glandular mass. It is wiser to remove all the glands of the affected group. In this, risk of recurrence is markedly reduced.

FIFTH STEP: The upper margin of the omohyoid is then looked for. The internal jugular vein identified deep to it and the glands dissected upwards off the vein. The main jugulodigastric, also called the tonsillar glands, lie in the angle between the common facial vein and the internal jugular vein. The complete dissection of a localised group through a transverse crease incision is to be aimed at. If the skin also is involved, excise unhealthy skin and pack wound with vaseline gauze.

SIXTH STEP: In the upper part of the wound the spinal accessory nerve must be sought for. Situation may be identified by palpating the transverse process of the atlas over which it passes and by seeing the nerve as it enters the deep surface of the sternomastoid at an oblique angle just below that level. The nerve is accompanied by the sternomastoid branch of the occipital artery, injury to which may give a warning.

SEVENTH STEP: If it is necessary to remove glands of posterior triangle, the jugular vein is drawn gently forwards and the glands dissected out taking care not to injure the spinal accessory nerve. If by accident, internal jugular vein is injured it may be doubly ligated or laterally ligated or a part of it excised, deliberately and ligated to facilitate thorough and easy dissection.

EIGHTH STEP: Vaseline gauze drain.

NINTH STEP: Suturing up of platysma accurately with fine catgut.

TENTH STEP: Closure of skin by subcuticular stitches.

PRACTITIONERS' CORNER

ANTERIOR POLIOMYELITIS AND ITS CARE AND TREATMENT

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Madras

INTRODUCTION

The purpose of this paper is to make available to the general practitioner the recent trends in the treatment of poliomyelitis.

The disease was first described by Heine in 1840 The first epidemic was recorded in Stockholm in 1887 In U.S.A., Colmer in 1843 described the disease as teething paralysis. In 1905, Sweden was the seat of a large epidemic comprising about 1,000 cases which gave an opportunity to study the disease. Wickman characterized the disease as an epidemic infectious disease, affecting children primarily and spread by contact with clinical and sub-clinical cases or symptomless carriers.

PATHOGENESIS

The disease affects mostly children but adults are by no means immune to this. It is said that adults acquire immunity by receiving sub-paralytic doses in childhood. But it has been shown by Selwyn Collins in U.S.A. that the age incidence is going up and also that people in the higher income groups are much more susceptible than the poorer class.

Route of Infection—Modern studies have effectively ruled out the olfactory mucosa as a portal of entry of the virus by the demonstration that the olfactory bulbs of fatal human patients do not show characteristic lesions or do not contain virus. It is believed now that the portal of entry is the alimentary tract but it

is not entirely clear how the virus gets entrance to it. It is also believed that the virus is disseminated along the nerve pathway.

Mode of spread of the disease from an individual is not exactly known. The probable ways of spread are indirectly through an insect or food and water contamination or directly by droplet infection. It is surmised now from the evidence available that the dissemination of virus in warm weather is brought about by various factors including insects, flies etc., and that the alimentary tract is the portal of entry and that the virus is excreted mostly in stools. In countries with primitive sanitation virus is widely disseminated and the infants come into repeated contact with it at an early age and this is reflected in the age distribution of cases. In modern sanitary conditions early repeated exposures to the virus is not the rule and so older age incidence of the disease. The incubation period varies from 3 to 35 days, the average being taken to be ten days.

Immunity—Immunity in human beings may be naturally acquired. This may be explained by the exposure to virus which in most individuals does not produce paralytic disease but gives rise to an effective immune response. Since more than one immunological type of poliomyelitis exist full immunity in the adult depends on prior exposure to all prevalent types of virus.

The use of adult human serum has been proposed for prophylaxis in children on the rationale that most adult sera have anti-poliomyelitis neutralizing power. But this is not of much practical value in an epidemic.

Pathology—Virus is of the smallest of the known viruses being approximately 8-30 millimicrons. Fourteen strains of viruses have been typed by cross immunity. All but one fall into one of the three main immunological types.

It has been pointed out by Bodian that the earliest cytopathological changes are diffuse chromatolysis of Nissl's substance in the cytoplasm of the nerve cells and mild cellular exudate consisting of polymorphonuclear and mononuclear leucocytes. Nerve cell changes may be present in the earliest stages without inflammatory reactions in the vicinity and, therefore, not necessarily the result of the latter, but rather the result of direct virus action. Nerve cell changes either lead to rapid destruction of the cells or to arrest in the stage of cytoplasmic chromatolysis, following which complete morphologic recovery of the cell generally occurs, over a period of about a month or less, depending upon the severity of injury. Virus activity, nerve cell changes and inflammatory reaction are localised only in certain susceptible regions of the C.N.S. largely due to specific differences of susceptibility of nerve cells in different areas. The lesions are usually confined to the motor area of the precentral gyrus and even here the lesions are rarely severe enough to suggest that they may produce clinical symptoms. Widespread dissemination of virus among motor nerve cells in spinal cord enlargements occurs in experimental poliomyelitis as early as the first day of paralysis. Motor nerve cells are either destroyed quickly or undergo slower recovery within about a month.

Clinical Signs and Symptoms

The signs and symptoms are similar to any acute infection such as fever, headache, some throat and upper respiratory infections, vomiting, rarely diarrhœa, pain in the extremities, soreness and stiffness of the neck and back specially in the lumbar region. Although the onset of weakness or paralysis is common while fever is still present it often occurs as the fever begins to fall and concurrently with an improvement in general clinical picture. Muscles including the calf muscles and those of the upper extremities exhibit stiffness and tightness. Wherever stiffness and tightness exist the muscles are apt to be sore and any attempted motion is painful. The stiffness and tightness in this disease constitute 'spasm,' 'head drop' as an early sign is described by some people.

The changes in the spinal fluid are diagnostic in doubtful cases; total cell count is elevated above eight to ten cells and protein above 35-45 thirtyfive to fortyfive mgm. per 100 c.c. The cells are predominantly monocellular than polymorphonuclear leucocytes.

The Guillain-Barre syndrome or infectious polyneuritis seems to appear in the course of an epidemic of polio. It should be entertained as a possibility in patients with paralysis whose spinal fluid early in acute disease reveals a normal cell count but an elevated protein content. The clinical features which distinguish it from polio are the symmetrical distribution of paralysis, the frequent occurrence of sensory loss, and the absence of muscle tightness and pain.

Treatment

For purposes of treatment in the acute stages the disease is considered under three varieties of poliomyelites—bulbar, spinobulbar, and spinal variety. Of these the bulbar variety is the most fatal. There will be paralysis of 9, 10, 11, 12, cranial nerves resulting in paralysis of pharynx and vocal cords this resulting in accumulation of secretions in the throat. Also sometimes the respiratory centre, and the cardiac centres are affected in which case the case proves to be fatal. The treatment in this type will be to keep the airway free by means of tracheotomy and also constantly removing the secretions by means of continuous suction.

The respiratory failure might occur in both bulbar and spinal forms. It may be of two types, (*a*) central which occurs in bulbar polio and results from involvement of the respiratory centre, (*b*) peripheral as result from involvement of the segments controlling the respiratory muscles in the intercostals and the diaphragm. Both types may be seen in the same patient at the same time.

When both upper spinal cord and bulb are involved the patient must be placed in a respirator after performing tracheotomy and the secretions must be removed by suction as and when they accumulate. These patients must be fed by nasal tube and intravenous glucose saline. Cardiac and respiratory stimulants are also to be used to tide over the acute stages.

In a spinal polio case which is beginning to have difficulty in breathing it is wise to have a respirator ready. In some cases the trouble is due to actual weakness of the respiratory muscles due to spasm (stiffness and tightness). Like the rest of the muscles the first treatment to be tried therefore is hot moist packs applied intermittently for 20 to 30 minutes. In some cases the respiratory exchange improves but if respiratory excursions become more and more feeble, pulse rate increases with an increase in cyanosis. Patients must be removed to the respirator. The patient must be taught to breathe through the low respirator and not against it. After the crisis is tided over the patient should be slowly weaned from the respirator as he literally forgets to breathe by himself. Dr. Jessies Wright of Pittsburgh showed that the respirator rocking bed is useful in helping the patients getting out of the respirator. It is only a bed which is fixed on a stand and which can be moved electrically 5 to 30 times a minute.

In addition to the usual respirator (Iron Lung) small portable types in which only the chest in enclosed in a air-tight transparent tent leaving the rest of the body free are on the market in U.S.A. For stimulating the diaphragm in those cases where it is paralysed a phrenic respirator has been designed by the children's hospital, Boston. The phrenic nerves are exposed and the nerve is stimulated 15-20 times per minute by two electrodes, which prevents contraction of the diaphragm each time. Now only skin electrodes are used at the surface of the phrenic nerve. This is also being investigated as regards its usefulness in polio cases. It is recommended that a firm hard bed be used from the beginning particularly for patients with marked muscle spasm. The bed should be fitted with a foot-board placed several inches beyond the mattress and allowing room for the heels or toes when the patient lies supine or prone. The foot-board also seems to protect the extremities from the bed clothing and allows propioceptive reflexes, to be stimulated when the feet rest against it. If the legs are weak, knees should be supported in a slightly relaxed position and weak arms should be in external rotation along side of the body but not against it.

Early bed rest is important for all patients whether at home or in hospital. It is shown that there is a close relation between the degree of physical activity in the early pre-paralytic stage and the final outcome in terms of severity of paralysis. Sedation and severity of pain are often pressing problems in the early acute disease. Relief of pain is best accomplished by the intermittent application of hot moist packs according to Sister Kenny's technique. Several drugs have been tried for the relaxation of the tightness of the muscle, such as prostigmine and curare but the results have not been consistent.

There is no specific treatment available for poliomyelitis. None of the antibiotics or sulphonamides are of any use except in combating the complications such as pneumonia etc. At one time it was believed that convalescent serum was valuable but recent investigations showed that it is not of very practical use.

Muscle re-education—This is the only specific treatment for poliomyelitis. During the acute stage the paralysed limbs must have the normal range of joint movement passively, stopping short of the starting of the pain. This keeps the joint mobile without becoming stiff and should be carried on at least three times a day.

Muscle re-education must be started soon after the improvement of the patient's general condition. Patient's co-operation is absolutely essential for the success of the treatment. The movement that he is expected to do is explained to the patient and it should be demonstrated twice by the doctor or the therapist and third time the patient should actively participate in the movement. This should be carried out for all the paralysed muscles at least twice a day. A thorough knowledge of the anatomy of the muscles are essential for the success of this treatment and the doctor must watch for the substitution movements usually done by the patient to overcome the paralysed muscle. A sample of the muscle analysis chart which is used in U.S.A. is also shown here. The muscles are graded as follows:—

Nil	...	Complete paralysis without any sign of contraction felt by hand.
1 or trace	...	Evidence of slight contraction felt by hand.
2 or poor	...	Contraction of the muscle with gravity eliminated.
3 or fair	...	Contraction of the muscle against gravity.
4 or good	...	Contraction against resistance.
5 or normal	...	Contraction against good resistance.

For a general practitioner it is difficult to do these extensive tests. So I suggest a much simpler chart which will give a fairly correct idea of the paralysis and will also help to know the progress of the patient.

This is classified according to the joint motions and the groups of muscles that are responsible for that particular movement. The various grades can be marked under the heading. By working at this chart it gives a fair idea of the amount of paralysis and for a busy practitioner it will not take long to fill up this chart.

POLIOMYELITIS CHART

Muscles	*Neck*	*Trunk*	*Shoulder*	*Elbow*	*Wrist*	*Fingers*	*Hip*	*Knee*	*Ankle*	*Toes*
Flexors										
Extensors										
Abductors										
Adductors										
Ext. Rotators										

During the muscle re-education treatment, the muscles showing the tendency to contracture or contracted muscles must be passively stretched gradually. This will avoid future operation for releasing the contracture.

The improvement in most of the cases is slow and gradual. By the end of three months, if proper treatment is carried on, at least 60 to 75 per cent improvement in muscle power is expected. By the end of next 3 months the improvement will be at least 80 to 90 per cent. If the muscle has not recovered by this time under proper treatment there is very little chance of recovery afterwards. But it is universally accepted that at least 2 years should elapse before the muscles can be declared to be beyond improvement.

Appliances such as spinal frames, walking calipers, and foot-drop splints have a definite place in the treatment. These will help to prevent deformities from developing and also help resumption of normal activities of the patient which is very important psychologically and physically. If suitable appliances are not given to take the function of the paralysed muscles, deformities will develop and inequality in growth of the body also develops and in some cases locomotion becomes impossible. Patients with both lower limbs paralysed can be made to walk by giving a walking caliper on one side and a corset brace on the other and with the help of crutches or walking stick as the case may be.

Operative treatment—This has a definite place in the treatment of poliomyelitis and usually comes after the expiry of the muscle re-education.

Neurotripsy—This has been described by Billing in the U.S.A. He claims neurotripsy operation helps the recovery of some muscles after they stop improvement with muscle re-education treatment. This has been tried by many people in the U.S.A. and the results are not as good as claimed. In a personal talk with Dr. Miland Knapp of Mineapolis, who is still doing this operation, he conveyed that this has a definite place in the treatment and at least fifty per cent of his cases have improved functionally if not in muscle grades. Dr. Kini in India did this operation on his patients and published a paper recently. He is also of the opinion that this procedure is worth the trial in some cases.

For correction of flexion and abduction deformities of the hip operation is valuable. After this the patient can be fitted with walking caliper and made to walk.

In selected cases tendon transplantations are very useful (tibialis anterior to peronei muscles and *vice versa*, also in the hand to improve the function of extensors of the wrist and fingers). The operation should be followed by muscle re-education.

Tendon lengthening of the contracted tendo achilles is also very useful and is a common operation in neglected polio cases.

To combat the disparity of the growth of the lower limbs operations on the normal limb such as stapling the epiphysis is being tried and the results are promising.

Stabilising operations such as arthrodesis of the knee and ankle and triple arthrodesis are also indicated to stabilise the knee or foot in suitable cases.

In conclusion, it is emphasised that patients suffering from poliomyelitis require prolonged care for a number of years. It requires patience both on the part of the patient and the physician.

CASE NOTES

SPINA BIFIDA OCCULTA
With Report of a Case

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AND
D. P. GHOSH, M.B., B.M.S.,
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The term ' spina bifida ' was first introduced by Nicoli Tulipius in the middle of the 17th century and since then it has been universally accepted in medical literature. The word ' spina bifida ' is derived from Latin and means a cleft in the vertebral canal. The term ' rachischisis ' so frequently used in the medical literature is derived from Greek and it signifies a cleft in the vertebral column but since von Recklinghausen's classical monograph on spina bifida in 1866, rachischisis has been used to denote a complete non-union of the walls of the medullary canal.

Statistics as to the frequency of spina bifida is very meagre. It is considered that this malformation occurs in approximately 1 in 1,000 births. In New York lying-in hospital this malformation was found in 1 in 1,552 births, Paris maternity hospital reported 22 cases among 22,293 children, Demme (1884) reported 57 cases among 36,148 children.

The ' spina bifida occulta ' the subject matter of this paper, which is a variety of ' spina bifida ' is still more rare. We could not trace any available statistics

as to its frequency. Reviewing the admission registers of the last 5 years of the Medical College Hospitals, Calcutta, not a single case could be traced. In the record of the Lake Medical College Hospital, Calcutta, one such case could be traced in a boy aged 7 years, but he had no symptoms. Because of the extreme rarity of the condition we thought it worth while reporting the case.

Case Report

K.M.R., aged 14 years, Hindu, male, was admitted in the Lake Medical College Hospitals, Calcutta, under our care on 10-5-50. About 5 years back he had a sudden acute retention of urine which was relieved by conservative means and he was all right for the next one year. Then he noticed that he could not pass urine freely, he had to strain a lot and press over the suprapubic region to complete the act of micturition. The sensation of bladder fullness was, however, present. Occasionally, he had incontinence of urine—distention with overflow. Since then he had a rise of temperature from time to time. About 4 years back he gradually developed talipes varus of the right side (Fig. 1).

Fig. 1—The Patient Showing His Back Where a Swelling is Noticed. He has also Talipes

Physical Examination—There was a swelling at the lumbosacral region with a central depression. There was talipes varus of the right foot and wasting of the muscles of the right leg. Tendon reflexes of the right lower extremity were sluggish and there was no sensory disturbance. There were a few trophic sores on the buttocks. Urinary bladder was distended upto umbilicus and atonic. Pressure over the suprapubic region caused dribbling of urine. Cystometrogram could not be undertaken due to lack of facilities.

Skiagram of the spine revealed spina bifida of the 5th lumbar vertebra.

Treatment—Under gas-oxygen anæsthesia the operation was undertaken on 30-5-50. A transverse incision was made over the swelling of the lumbosacral region. The spine of the 5th lumbar vertebra was found undeveloped, the right lamina grew like an operculum covering the spinal column. The left lamina was very underdeveloped (Fig. 2).

On retracting the right lamina a fibrous band (membrana re-uniens) was found attached to its deeper aspect, the other extremity of which could be traced to the cauda equina. The membrana re-uniens was divided and the wound was closed. The patient was relieved of his symptoms.

As the bladder symptoms reappeared after 3 months a second operation was undertaken in which the operculum

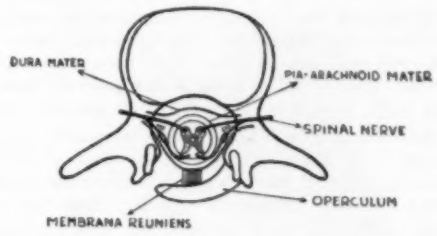

Fig. 2—Spine Bifida Occulta Showing its Anatomical Relations (Diagrammatic)

was completely removed. This time the patient made an uneventful recovery.

Progress of the case—A fortnight after the first operation he could pass urine freely, wetting of the clothes stopped. Trophic ulcers of the buttocks completely healed in a couple of months' time.

Second operation for the reappearance of the bladder troubles effected a complete cure.

Discussion

Pathogenesis—There is a difference of opinion as to the cause of spina bifida, but one factor is constant that there is developmental defect in the neural arch. Meckel, Fleischmann and others in the early part of 19th century attributed the anomaly to the arrested development of the arches. Later Froster, Rokitansky Ahlyeld thought it to be due to the pressure effect of the cystic tumour, arising either within the meninges or within the central canal of the spinal cord, on the neural arches causing a cleft. The theory of the "dropsy of C.N.S." was superseded soon by that of Curveilhier, Virchow, Rankee who looked upon the abnormality as an imperfect separation of the neural plate and skin which subsequently caused arrested growth of the neural arches. Von Bergman and Von Recklinghausen suggested—(*i*) arrested development of neural arch, and (*ii*) an increased transudation from pia and arachnoidal vessels as two distinct ætiological factors for this anomaly. No doubt that there is defective development of the vertebral arches but it is not sufficient to produce a hernial protrusion almost always present unless there is an increased C.S.F. pressure for some reason or other. It is quite reasonable to assume that both the arrested development and the increased C.S.F. pressure play equal part in the production of spina bifida.

Spina bifiida occulta is a variety of spina bifida. Its cause may be attributed to imperfect separation of neural plate and skin and subsequent arrested growth

of neural arches. The non-separated portion between the skin and the spinal cord forms a fibrous cord (membrana re-uniens) which passes through the vertebral cleft. It is composed of connective tissue, fat, elastic fibres and striated muscular fibres. As this cord fails to increase in size proportionately to the growth of the spinal cord and column, it pulls upon the cord and roots producing symptoms. The pressuure effect of cystic swelling is absent here. Herniation characteristic of other types of spina bifida is not generally seen in spina bifida occulta because of lack of pressure effect.

In treating a case like this it is suggested that the division of the fibrous cord and the removal of the fibro-fatty lump, if there be any, are necessary to effect a cure. In our experience, however, these two procedures failed to achieve the goal, so a second operation was undertaken and the operculum was removed which resulted in a complete cure. Possibly after operation there is development of granulation tissue and fibrous tissue therefrom which due to the presence of operculum exert pressure on the elements of the cauda equina producing symptoms, and removal of the operculum helps in that way.

SUMMARY

1. A case of spina bifida occulta is reported.
2. The literature on the subject is reviewed.
3. It is suggested that in addition to the division of the membrana re-uniens and removal of the fibro-fatty lump, the operculum should be removed as well.

Acknowledgment—Our thanks are due to Capt. K. L. Sen, Principal *cum* Superintendent, Lake Medical College and Hospital, Calcutta for his kind permission to publish this case.

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BONE-GRAFTING
With Report of Three Cases

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Bone-grafting, a limb-saving surgical procedure has received attention in Indian medical literature in recent years. Many surgeons are now employing it in suitable cases. Its scope has increased after the discovery and use of penicillin which has gone a long way to minimise infection.

Originally devised for treatment of ununited fractures, its use is now extended to loss of bone resulting from any cause—injury, infection or neoplasm.

Cases must be carefully selected before this operation is undertaken. The chances of success of a living bone graft depend on absolute asepsis, complete hæmostasis, efficient fixation of the graft and absolute immobilisation of the limb until the graft has been incorporated. Once union appears to have taken place, active use and movements stimulate the growth of bone and strengthen the graft.

Three cases of bone-grafting performed in Mahatma Gandhi Hospital, Jodhpur, are described below:

CASE REPORTS

Case 1—M.S., an agricultural hindoo lad of 14 was admitted on 15-5-50 for continuous pain in the left side of head and giddiness. Four months back he had fractured his skull due to a fall. For the last month in addition to pain and giddiness, he has noticed a bulging on the left side of his head at the site of injury and the giddiness and pain have increased.

On examination he was found to be of fair build, slightly anæmic. He had an apathetic and worried look. The response to questions was not prompt. It appeared that he had to recollect past events before he answered. His memory was dull. In the frontoparietal region, there was a pulsatile swelling 2½" × 1" raised ¾" above the surface of the skull. It was soft with a thin covering over it and could be pushed back through the defect in the skull, causing intense pain. The posterior edge of the defect was felt elevated.

X-ray of the skull showed an old depressed fracture in the frontoparietal region with a gap in the bone.

Between 27-5-50 and 17-6-50 three lumbar punctures were done. Every time cerebrospinal fluid under pressure was removed (the pressure being 450 mm. of H_2O). This relieved all the symptoms and the swelling also subsided, only to return with the symptoms in about 48 hours.

On 29-6-50 the bone was exposed through a semilunar skin flap, the projecting rim of bone all-round was removed and the herniated brain with all its meningeal coverings was pushed back in the cranial cavity. A thin broad bone graft with periosteum intact was removed from the upper and medial aspect of the left tibia and placed over the defect. The graft was sutured in position with the pericranium and the skin closed completely. Patient was unconscious for 12 hours after operation and when he came round complained of pain all over the body. His pupils were semidilated but otherwise there was no abnormality. Gradually the pain disappeared, the pupils returned to normal and the wound healed by primary union, the graft taking perfectly (Figs. 1 and 2).

He left the hospital on 3-9-50 completely cured.

Case 2—S. a hindoo girl, 13 years, was admitted on 11-6-49 for pain in the lumbar region of the back of one year's duration. For 4 months past she noticed a projection in the bone and although she was able to walk about, there was difficulty in bending and getting up from a reclined position. On examination prominence and tenderness was noticed on the spine of the last lumbar vertebra and the 1st piece of the sacrum. The general health was not unsatisfactory and the x-ray showed massive destruction of the first piece of sacrum with loss of intervertebral space between it and the last lumbar vertebra. Between 14-6-49 and 7-12-49 two plaster of paris jackets were applied but the x-rays showed no improvement. On the other hand, slight extension

FIG. 1

FIG. 2

FIG. 3

FIG. 4

FIG. 5

FIG. 6

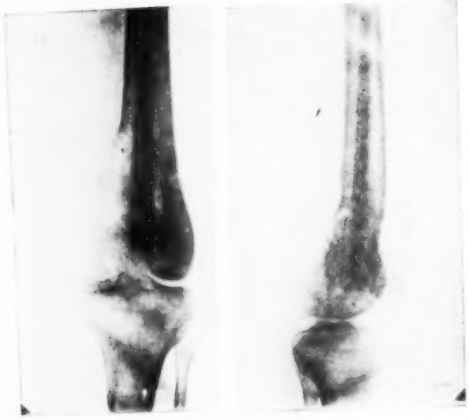

FIG. 7

FIG. 8

of the tuberculous process was noticed. Tenderness and muscular spasm, however, had greatly disappeared. On 13-1-50 an Albee's transplantation of bone was done by exposing the affected spine and grafting a large piece of tibia (divided into two equal parts) on either side after denuding the periosteum of spinous processes, the grafts being held in position by strong catgut sutures. The patient was kept in the prone position on an anterior plaster cast.

For the 1st 7 days she had an irregularly elevated temperature, but the wound healed by primary union. For three months she was kept in the prone position after which a posterior plaster cast was prepared and she was nursed on her back for a further 3 months. Six months after the operation she was allowed to sit up in bed. She had no pain. A fortnight later she was permitted to stand up and gradually walk.

She left the hospital on 9-9-50 walking about with com parative ease, considerably improved in general health and with no pain in the back.

The last x-ray showed firm union of the graft and the tuberculous process completely arrested with new bone formation all-round.

She reported on 24-1-51. She is free from all pains and walks about freely. There is restriction in bending due to rigidity of spine in the grafted area.

X-rays are reproduced in Figs. 3 and 4.

Case 3—C.L., a hindoo male of 25 was admitted on 14-11-49 for swelling over the left knee of gradual onset without any history of injury and of 3½ months' duration.

On examination a semi-soft swelling was seen occupying the medial side of the upper part of left knee with unmistakable egg-shell crackling. There was slight limitation of full flexion of knee. X-ray showed an osteoclastoma occupying seven-eighths of the width of the lower end of the femur on its medial side.

On 3-12-49 the tumour was exposed through a medial incision and completely removed, thus exposing the upper surface of the tibia—only a thin portion of the external condyle of the femur was left intact. Wound was partially closed and the rest packed with sterile vaselin gauze. A circular plaster cast was applied to the limb immobilising the hip with a spica. On 22-3-50 the plaster cast was changed; the wound had completely healed. A fresh cast was applied and the patient sent home on 31-3-50 and was asked to report after a month for bone grafting.

He was re-admitted on 15-5-50 and operated on on 31-5-50. The lower end of the femur was widely exposed by Henry's incision after dislocating the patella laterally. The cavity left after removal of the osteoclastoma was found filled by fibrous tissue. This was removed. At the upper part the growth had involved a small part of the bone. This was thoroughly excised. A long thick graft was cut from the shin of the tibia of the same leg. One end of it was thrust for about 3" into the medullar cavity of the shaft of femur. The other end was kept abutted against the shell of bone. Thick chips from the iliac crest were filled all-round this graft to fill the cavity. The wound was closed and the limb encased in plaster of paris cast with hip spica.

Three months later the plaster was removed and the bone x-rayed. The graft was in position but there was no new bone formation. Plaster cast was again applied as previously.

Three months later x-ray showed bone graft *in situ* with new bone formation around it. No evidence of osteoclastoma was noticed. He was again plastered and sent home to report after 3 months (Figs. 5, 6, 7 and 8).

SUMMARY

The utility of bone grafting as a limb-saving device for loss of bone due to injury, infection or neoplasm has been described.

Three cases of bone-graft are described in detail.

OBITUARY

We are grieved to announce the demise of Dr. U. Rama Rau of Madras. He was one of the ex-presidents of our Association. He presided over the All-India Medical Conference at Nagpur in December 1935. Dr. Rau had a rather unique career in professional and public life. Educated at the Madras Medical College he joined the subordinate provincial medical service at Madras and soon left it and took to indepen dent practice. He built up an extensive practice and started the famous monthly medical journal *Antiseptic* and the lay health journal known as *Health*.

He joined general politics and was elected a member of the then Council of State of India and sub sequently became the President of the Madras Legislative Council when Congress Government was formed in 1938. He was held in high esteem by the profession and public alike.

Dr. Rau was not only a foundation member and ex-President of our Association but was a leading colleague of ours in the field of medical journalism in India and we feel his passing away as a personal loss to us.

We offer our sincerest condolence to his able son Hon'ble Dr. U. Krishna Rau and to the other members of his family. May his soul rest in peace!

JOURNAL OF THE
INDIAN MEDICAL ASSOCIATION
CALCUTTA, JUNE, 1952

MEDICAL COUNCIL ON EDUCATION

On the 19th April the Medical Council of India decided that " only one system of medicine, namely the modern system, with a minimum uniform standard as prescribed by the Council should be adopted in this country." This resolution now clearly presents a specific proposition for the guidance of all who want to join the medical profession irrespective of the system one wishes to practise—indigenous, homœopathic or modern scientific. While placing the aforesaid resolution before the Council, Dr. Raja, Director-General of Health Services, Government of India, said that " There are such fundamental differences in theory and practice between modern medicine, indigenous system of medicine and homœopathy that it would be most unsatisfactory from the point of view of the interests of attendance and of advancement of these systems to arrange for simultaneous teaching of modern medicine and of any of these other systems during the under-graduate course in modern medicine."

" The course of indigenous system and of homœopathy should, therefore, be prepared only as post-graduate course of training after the intending practitioner has obtained basic qualifications in modern medicine as is the case, in respect of homœopathy in the United Kingdom, Europe and in America." The Council considered it essential that every person undergoing training to enter the medical profession should have a basic qualification in modern medicine so that the provision of adequate medical care both curative and preventive for the population and armed forces might be effectively continued. We must confess that we were very much impressed by the sincerity of the above resolution and we share the views expressed by the Director-General in support of the resolution, especially as the considered opinion of the medical profession hinged on the recent attempts at encroachment upon the fundamentals of the modern scientific system of medicine by interested quarters. We have to observe that at long last the Medical Council of India has decided in favour of the scientific trend not only of this country, but has set a very timely guidance for the scientific and educated world. It is not the desire of anyone to stifle the progress of the indigenous system of medicine which reached its peak of glory in the earlier phases of development of this land of ours, but for the last seven hundred years it has assumed a static character and in the absence of any research in this field the knowledge which had gained a high degree of usefulness lay stagnant and is now insufficient so far as the needs of the present world are concerned. Scientific medicine has developed as a result of intensive and extensive observation by devoted workers practically all over the world. It has taken sufficiently long time and comprehensive researches to establish a particular data or any theory about any of the prevalent diseases and their remedies. The edifice of scientific medicine should under no circumstances be allowed to be disturbed in one's desire to develop any other branch of medicine. It must be said that the votaries of scientific medicine are by no means satisfied with all they have achieved in fighting the disease but are still devoted in the pursuit of finding out new or better theories in respect of diseases and trying to discover their remedies. By these processes, modern medicine has faced all possible scrutiny and has been able to hold its own all over the civilised world. Science cannot be said to be the absolute preserve of the East or the West and cannot be rigidly demarcated to belong to one or the other. The modern system of medicine has been introduced in this country primarily by the westerners at its initial stages. Hence it should not be necessarily condemned, but should be looked at from a realistic angle. It is no doubt true that this branch of science received much support from foreign rulers of this country but it developed not merely on such support but it grew and became rich with local contributions which laid its foundation on a solid basis. It would be a misfortune if this branch of medicine was discarded as it had its origin in countries outside India. Since the independence of our country some of our orthodox leaders are trying to get patronage of the State towards the indigenous system at the cost of the scientific system of medicine. Though they have initially succeeded in some of the States, we are glad to learn that the Medical Council of India has taken a very wise and timely decision in the matter of laying down what should guide the future of the medical profession irrespective of any of the systems of medicine that are in vogue in our country. We are convinced that a sort of confusion was created by the Chopra Committee's recommendations on the indigenous system of medicine which attempted a compromise with the prevailing opinion of certain quarters regarding the formation of a sort of a hybrid of the different systems. There exists the desire in some quarters to satisfy all and sundry in shaping a programme to combine these systems which, we are constrained to observe, would neither satisfy any one nor would help in the advancement of the medical science of any of the systems.

We have passed through five years of independence and it is time we plan things in such a manner that sentiments and prejudices do not confuse our views but we proceed ahead in the hope of serving millions of our countrymen who have shaken off superstitions, ignorance and prejudice. There are cunning persons who taking advantage of the prevailing uncertain conditions in the country try to add further to the confusion. It is time that the State takes adequate measures to guard against these machinations. We

unhesitatingly lend our whole-hearted support to the decision of the Medical Council of India which has ultimately desired to lay down the bare minimum which the future entrants to the medical profession should be equipped with. It is certainly very much desirable that those who want to specialise in indigenous or homœopathic or any other system should after obtaining the minimum basic qualification as prescribed by the Medical Council of India undertake such steps and add to their personal knowledge and utilise the same for the benefit of the society at large. Let researches be continued properly on scientific principles and any data which stand the scrutiny of experiment be admitted by all advocates of the healing art and used for the benefit of the suffering humanity. If on these results any scheme for blending of some branches of the science is possible the same can be safely accepted. Bigotry or prejudice should not blur our vision in this respect and it is very much desirable that every one of the sciences keeps an open mind and after a proper grounding in medicine as per the minimum standard laid down by the Medical Council proceeds to carry on investigations on other systems and accept their salient features for treating the suffering humanity on rational principles.

We would urge upon the various State Governments and the Government of India to pay heed to the above-quoted recommendations and plan a future programme to develop indigenous medicine as a post-graduate course which will ultimately benefit the people in distress.

We are waiting for repercussions of this very correct and rational approach to the tackling of medical education in this country. We hope all right-thinking men particularly our leaders will pause and think about the recommendations and take such decisions to fall in line with the Medical Council and equip the profession with the background of a training the result of which will be beneficial to all aiming at the well-being of our people and country.

MEDICAL MEN IN LEGISLATURES

In the first general election to the Indian Parliament and State Legislatures, a fairly large number of doctors has been elected. The participation of medical men in shaping the policy of administration of our country is a happy feature.

The problem of the health of our country has become a very knotty one and the assistance of medical men in this matter will be a valuable contribution towards its solution, because of their well-earned experience in the line. This had been realised by the people—the electors, as is manifest from the success of so many doctors in the election.

We believe, the presence of our professional colleagues in Parliament and State Legislature will go a long way towards the solution of many a problem confronting the country in the present time.

We have collated the names of the following doctors through our Provincial branches and if there are any omissions, readers are requested to send the names left out for publication hereafter.

Parliament (House of the People).

MADRAS: 1. Dr. Edward Paul Maduram; 2. Dr. Ramachandran.

WEST BENGAL: 1. Dr. Satyaban Roy; 2. Dr. Sushil Ranjan Chatterjee; 3. Dr. Pasupati Mandal.

Council of State.

UTTAR PRADESH: 1. Dr. Murari Lal; 2. Major General Saheb Singh Sokhey, I.M.S. (Retd.).

Legislative Assembly.

ASSAM: 1. Dr. Homeswar Deb Chaudhury.

MADRAS: 1. Dr. U. Krishna Rau; 2. Mrs. Soundaram Ramachandran.

Legislative Council.

1. Dr. M. V. Krishna Rao.

Legislative Assembly.

MADHYA BHARAT: 1. Dr. Prem Singh Rathor; 2. Dr. Devi Singh Rajpurohit.

MADHYA PRADESH: 1. Dr. Sheo Dulare Mishra; 2. Dr. Khub Chand Baghel; 3. Dr. Amritrao Ganpatrao Soner; 4. Dr. P. G. Ekbote.

UTTAR PRADESH: 1. Dr. Jawahar Lal; 2. Dr. Shri Nath Bhergava.

WEST BENGAL: 1. Dr. Tarapada Pramanik; 2. Dr. Amritalal Hazra; 3. Dr. Beni Charan Dutt; 4. Dr. Mahammad Hossain; 5. Dr. Kanai Lal Das; 6. Dr. Raghunandan Biswas; 7 Jiban Ratan Dhar; 8. Dr. Amulya Dhan Mukharji; 9. Dr. Ranendra Kumar Sen; 10. Dr. Narayan Chandra Roy; 11. Dr. B. C. Roy; 12. Dr. Jyotish Chandra Ghosh; 13. Dr. Krishna Chandra Satapati.

Legislative Council.

1. Dr. Narendra Nath Bagchi.

CURRENT MEDICAL LITERATURE

Modern Treatment of Syphilis

Thoman (*Bull. N. Y. Acad. Med.*, 27: 175, 1951) writes that although he does not advise minimum therapy such as a single treatment for early syphilis, it is a fact that early darkfield positive syphilis has responded well in at least 85 per cent of cases following a single treatment with 2,400,000 units of procaine penicillin in oil and aluminum monostearate and at Bellevue Hospital it has been found that there is no advantage in continuing the treatment of most cases of early syphilis with repository preparations of penicillin beyond one week. Late neurosyphilis which was formerly the most difficult type of the infection to treat can now apparently be successfully arrested in over 90 per cent of cases by 15 daily injections of 600,000 units of procaine penicillin in oil and aluminum monostearate.

For early acute syphilis three injections of 1,200,000 units of procaine penicillin in oil and aluminum monostearate given at intervals of two or three days should be sufficient therapy for 90 per cent of cases. In the opinion of the author it is wise to give no less than 1,200,000 units for the first injection in the treatment of early syphilis. Following this initial treatment, daily injections of 600,000 units can be given for five days or injections of 1,200,000 units can be given at less frequent intervals. If desired, injections of 1,200,000 units can be spaced at weekly intervals for three or four weeks but in the author's experience at Bellevue Hospital there is no advantage in such prolonged therapy and he believes that more frequent injections are advisable.

For late syphilis other than neurosyphilis a total dosage of 6,000,000 units of penicillin, given over a period of not less than ten to fifteen days, should be adequate for most cases. Injections of 1,200,000 units can be given every other day or injections of 600,000 units can be given daily with the omission of Saturdays and Sundays if the latter is desired. For all types of neurosyphilis the author has found that daily injections of 600,000 units of procaine penicillin in oil and aluminum monostearate for fifteen days have afforded satisfactory treatment in over 90 per cent of cases and probably injections of 1,200,000 units every other day for eight injections would give equally good results.

There are still differences of opinion regarding the ultimate effects of penicillin therapy and the data now available do not show 100 per cent effectiveness for any known type of antisyphilitic therapy but the author is convinced that the schedules outlined above afford reasonably good treatment for the great majority of syphilitic patients.

Treatment of Leukaemia

Whitby (*Brit. M. J.*, 2: 1573, 1951) in dealing with the subject writes:

The nature, and, indeed, the institution, of treatment are greatly influenced by the acuteness of the disease, by the urgency of symptoms, and to some extent by the hæmatological type. Symptomless types, especially in the elderly are better left untreated. And equally, in the final phases of the acute disease, there is little to be gained by prolonging a miserable existence for a few days by a massive blood transfusion. At the outset the practitioner himself should fully appreciate that no cure is known. Rest in bed is essential whenever there are fever, infarcts of the spleen signs of cardiac failure, hæmorrhage, or other generalized symptoms, but otherwise patients should be encouraged to lead a normal life on a full diet. Indeed the maintenance of morale is one of the important points in treatment and how much or how little of the inexorable end-result of the disease should be communicated to the patient or the relatives is a matter for judgment in each case.

ACUTE LEUKAEMIAS

The acute forms of the disease, with fever, toxæmia, hæmorrhagic symptoms, and distressing stomatitis, are rarely amenable to any form of treatment designed to restrain or control the leukæmic process. Spontaneous remissions may suddenly and unexpectedly occur, and these are often attributed to whatever treatment has been instituted as indeed they may well be. Such remissions, spontaneous or otherwise, are most common with the acute lymphoblastic type of leukæmia in children, and there is some evidence that massive transfusion, or exchange transfusion, may positively induce a remission (sometimes of months duration and therefore, of value) so strikingly that glands disappear and even the marrow almost reverts to normal. In the majority of acute cases, however, the most to be expected from any form of treatment is a temporary and fleeting remission, and such has been claimed to follow blood transfusion especially with or without aminopterin or urethane. The same results are obtained with A.C.T.H. and cortisone.

Irradiation is contraindicated in any form of acute leukæmia, and most of those with experience have the impression that it stimulates the disease. The monocytic type of leukæmia, which is generally acute or subacute, is very little influenced by treatment. The distressing condition of the mouth, in which spirochætes are often abundant, as unaffected by arsenic paint or the injection of neoarsphenamine or most of the commonly used astringent mouth-wash consisting of 40 gr. of citric acid to 1 oz. of water (1 gr. to 10 Ml.) diluted to at least one part in seven with water before use. The dilution which can be tolerated has to be found by trial in each case. The wash should not be used for more than three days on end without an interval of two or three days.

CHRONIC LEUKAEMIA

In the chronic form of leukæmia attention is again directed towards the relief of symptoms. Many cases are, however, suitable for the institution of treatment designed to restrain or control the leukæmic process, particularly when leukæmic infiltration has caused painful or troublesome pressure symptoms or led to the gross enlargement of organs such as the spleen or lymph nodes.

Symptomatic treatment—Anæmia may not be prominent at the outset, but inevitably develops during the course of the disease. The anæmia is ordinarily intractable and is unaffected unless the leukæmic process is controlled, in which case spontaneous improvement occurs. Neither iron nor liver is significantly effective, but both are usually prescribed and some benefit occasionally follows the use of the rather unpalatable proteolysed liver preparations. Transfusion may be required, but its effect is usually short-lived unless other measures have exerted some control over the leukæmic process itself. The dramatic remissions which may follow massive transfusion in the acute disease are not usually obtained. There is little doubt that *arsenic*, an old-fashioned remedy has an important place in the treatment of the disease, particularly in relieving troublesome symptoms arising from

leukæmic infiltration. Arsenic in appropriate dose will control fever, reduce the leucocyte count, reduce the size of the spleen, relieve pruritus and itching, and improve anæmia. By carefully regulating the dose of arsenic, remissions especially in the chronic myeloid type of the disease, may sometimes be sustained for long periods. Five minims (0·3 ml.) of Fowler's solution may be given three times a day, increasing by 1 min. (0·06 ml.) daily until signs of arsenical intoxication appear, whereupon administration should be stopped for four or five days and then be resumed at a lower dosage. Arsenic, which is never given concurrently with irradiation or other antimitotic measures but may be used in the intervals between such treatment, is probably the best form of treatment for pregnant women, for whom irradiation is unsuitable.

The distressing symptom of priapism is very difficult to relieve, and unless x-ray applications are effective, surgical measures, involving incision and evacuation of the contents of the corpora cavernosa, are the only means of treatment.

To limit leukæmic process—Treatment which is designed to restrain or control the leukæmic process is based on the fact that mitosis in a dividing cell is inhibited or prevented by physical factors such as ionizing radiations and by certain antimitotic drugs. *Ionizing radiations* may be derived from x-rays, radium, or radioactive isotopes of phosphorus (which is selectively absorbed by bone) or sodium (which is generally distributed). *Antimitotic drugs* include arsenic (see above), colchicine, urethane, nitrogenmustard derivatives, and pterins or folic-acid antagonists. By temporarily limiting the degree of leukæmic hyperplasia or leukæmic infiltration, secondary features, such as anæmia, or pressure symptoms are often improved. Treatment needs to be carefully controlled by regular hæmatological examinations in order that the antimitotic process may not proceed to the length of causing agranulocytosis, severe thrombocytopenia, and apalstic anæmia. The choice in respect of these vairous antimitotic measures is guided sometimes by fashion, sometimes by availability, sometimes by the patient's tolerance to a particular treatment, and sometimes by specificity, whereby a particular form of leukæmia appears to respond better to one than another.

IRRADIATION—Irradiation is an effective form of treatment in the chronic myeloid and lymphatic forms of the disease. Irradiation is not used in acute and subacute forms or in the monocytic types (which, in fact, is usually acute), and is rarely advisable when the blood picture is aleukæmic.

The technique of irradiation treatment is highly specialized and extremely variable according to the views of different radiotherapeutists. Some give a general irradiation of the whole body, others irradiate the skeleton, others the spleen or vital organs which, symptomatically, appear to be infiltrated. Many experts regulate the amount of irradiation by means of the leucocyte count, which is usually reduced to 20,000 per c.mm. or less. Others regulate the radiotherapeutic treatment by the general condition and by the red cell count rather than by the size of the spleen and the leucocyte count. In many ways the general condition is the best guide.

Irradiation may also be applied by means of radioactive isotopes, more especially phosphorus, which has a half-life of 14·3 days. But the method has a grave and incalculable disadvantage, in that the variation in individual susceptibility is great. Some tolerate large amount; others rapidly develop thrombocytopenia, hæmorrhagic symptoms, or severe anæmia agranulocytosis, or all, with even minimal doses. Freedom from irradiation sickness is one practical advantage which patients who have previously had x-ray therapy greatly appreciate. In general, there is now a tendency to discard the use of radiophosphorus and to use conventional x-ray therapy as being somewhat safer in its effect, more predictable in its results, and attended by less hazards to the patient, even though it may cause some sicknes or discomfort in the course of treatment.

ANTIMITOTIC DRUGS—The alternatives to irradiation are the antimitotic drugs, *urethane*, which is given by the mouth, and *modifications of nitrogen mustard*, which are administered intravenously. The general effect of urethane is similar to that obtained by treatment with x-ray namely, a fall in total leucocyte count and a reduction in primitive cells, so that the hæmatological pattern returns to normal. At the same time the spleen and lymph nodes are reduced in size, whilst accompanying anæmia may be greatly improved. The great advantage of urethane is the ease of administration and the relative infrequency of unpleasant effects as compared with x-rays. However, a proportion of patients manifest intolerance by anorexia, nausea, vomiting, and less commonly, by diarrhœa and drowsiness. Not all subjects react favourably, and treatment needs to be carefully controlled by regular blood counts, since thrombocytopenia, agranulocytosis, and even aplastic anæmia are readily produced by overdosage. The inhibiting hæmatological effects continue for some time after the withdrawal of the drug. Urethane has in the opinion of the author given the best results in chronic myeloid leukæmia and, save for a few cases of intolerance and a few of failure, is as effective and less misery-making than x-rays. The drug is also reasonably effective in chronic lymphatic leukæmia, but is valueless in any of the forms of acute leukæmia. The usual dose of urethane is 0·5-1 gm. three or four times a day, administered by mouth. Treatment is continued until the leucocyte count falls to about 50,000 per c.mm., whereupon the dose is reduced to 0·5-1 gm. for the whole day; the treatment is stopped when the count reaches 20,000 per c.mm. Maintenance treatment can be prescribed once the early signs of relapse appear.

Synthetic modifications of mustard gas, the nitrogen mustards, have the same effects as the original material—namely, to cause aplasia of the hæmopoietic system—and they have been used for the treatment of various neoplastic conditions, including leukæmia. The two compounds most used are the *bis* and *tris* nitrogen mustards, and of these the bis form is the less toxic. The drug is not suitable for the acute leukæmias, and does not appear to be more effective than x-rays in the chronic forms of the disease, though some improvement has occasionally been found in cases resistant to irradiation. The results are extremely variable and irregular, but the chronic myeloid type responds most consistently and somewhat better than the chronic lymphatic forms. The dosage is 0·1 mgm. per kg. of body weight administered intravenously daily or every second day for one to seven days. Untoward effects include pain, inflammation and sometimes, thrombosis at the site of injection, with tissue necrosis if leakage or extravasation occurs. At the same time, within an hour of injection there are usually systemic symptoms such as anorexia, nausea, vomiting, headache, and vertigo. If dosage is excessive or not properly controlled agranulocytosis, thrombocytopenia, and aplastic anæmia readily occur. There can be little doubt that this form of

treatment, for which much was hoped is unpleasant, not without danger, and no more effective than irradiation.

Folic Acid Antagonists—The discovery of the effect of folic acid on hæmopoiesis led to the trial of folic acid antagonists in the leukæmias. These pterins, of which aminopterin has proved the most satisfactory, are of considerable theoretical interest, since they open up a potential line of treatment affecting cell metabolism rather than cell destruction. However, it must be admitted that, in general the results of treatment have been to produce hæmatological rather than clinical improvement—a criticism which unfortunately applies equally to all forms of treatment designed to control the activity of the leukæmic process. With aminopterin the toxic manifestations may be severe, and even fatal; these include severe and refractory stomatitis, agranulocytosis, enteritis, aplasia of the bone morrow, hæmorrhagic symptoms, and loss of hair.

On of the difficulties of treatment is the immense variation in the clinical picture, the presentation, the symptoms, and the general features of the disease from case to case, so that what suits one case may be quite unsuitable for another. On the whole, the condition has to be treated symptomatically, and there is little point in treatment for treatment's sake when the case is symptomless, as treatment does not appear to prolong life.

On the other hand, when the form of the disease is radiosensitive—and in this respect lymphosarcoma can usually be included—much can be accomplished in the way of improving comfort and efficiency by reducing the size of a tumour or an affected organ, thereby relieving symptoms caused by pressure, traction, or obstruction.

Aureomycin in Skin Diseases

Solomons (*Brit. M. J.*, 2: 525, 1951) writes that aureomycin ointment is undoubtedly a powerful addition to the therapy of pyogenic skin conditions. Its local sensitizing powers are low, contact dermatitis being produced in only two cases of this series, and they already had a history of allergy. The most striking performance was the rapidity with which cases, and especially the chronic ones, of sycosis barbæ resolved. The temperamental nature of this condition is well-known, and although it may be said that the follow-up periods have not been long enough to pronounce a cure, the patients unanimously acclaimed the treatment as the best they had ever used.

Its efficacy in other pyogenic affections is equal to penicillin. One cannot hope to clear up completely a condition such as impetigo in less than four to seven days. Its great advantage over penicillin cream or ointment lies in the absence of untoward reactions. In the miscellaneous group it was most effective in acne necrotica, but, as with previous forms of local treatment, relapse soon occurred.

At the moment it would seem that aureomycin is the best available antibiotic in ointment form for pyogenic infections. Future use, however, may prove it less reliable; resistant strains of organisms and different examples of sensitivity may be encountered. A clinical evaluation of 3 per cent aureomycin hydrochloride ointment made in the treatment of 144 dermatological cases is described. Sensitization in cases with past or present histories of allergy is also described.

The ointment is simple to apply, and is stable over a long period without refrigeration.

NOTES AND NEWS

FIRST INTERNATIONAL CONGRESS OF DIETETICS

The First International Congress of Dietetics organized by the Netherlands Dietetic Association will be held from the 7th to 12th July in the Royal Tropical Institute, 63 Mauritskade, Amsterdam-East.

The purpose of this Congress is to provide the representatives of National Dietetic and Dietetitians' Associations and experts in the field of Nutrition of different countries with the opportunity of exchanging views on the methods, in which the science of food, nutrition and dietetics may b applied to the welfare of the people.

NEW T. B. WARD FOR SHILLONG HOSPITAL

Mr. Bishnuram Medhi, Chief Minister of Assam laid the foundation stone of a new 12-bed tuberculosis ward in the Reid Chest Hospital, Shillong on the 18th April, 1952. The World University Service has donated Rs. 20,000 for the construction of the ward.

DONATION OF EYES

The management of the Ramkrishna Mission Sevashrama, Vrindaban, which is one of the premier Eye-treatment centres in Uttar Pradesh, reports that Sri Kushiram of village Ramwari, Dist. Mathura very willingly came forward to donate the eyes of his departed ward for the grafting of cornea to a blind patient. This new type of donation in the service of suffering humanity is an example to be emulated by noble-minded persons all over the country.

ILO TO CONSIDER NEW MATERNITY CONVENTION

New International Regulations designed to lead to "further progress in the protection of working mothers" will be considered by the general conference of the International Labour Organisation to be held at Geneva, 4 to 26 June. These regulations would take the form of an International Labour Convention, supplemented by a formal Recommendation.

The proposed Convention would provide for 12 weeks maternity leave, of which at least six weeks would be required to be taken after confinement; payment of maternity benefit during this period; and pre-natal and post-natal medical care. The Convention would also forbid employers to dismiss mothers during maternity leave.

NEW RABIES VACCINE FOR DOG IMMUNIZATION

The development of an entirely new rabies vaccine for dog immunization was announced recently by Lederle Laboratories Division, American Cyanamid Company.

The new vaccine has been tested successfully on more than 12,000 dogs. It will be made available to veterinarians and to sanitary and public health officials throughout the world to aid them in the prevention of rabies in dogs.

The new vaccine is produced from live virus which has been modified by growth in chick embryos. It is completelv modified and does not contain mammalian brain or spinal cord tissue.

It has been pointed out that veterinarians will be able to immunize dogs by a single vaccination and rabies can be effectively controlled and eventually virtually eliminated.

TWO SYNTHETIC DRUGS FOR TUBERCULOSIS

Two coal-tar derivatives known as Rimifon and Marsilid, variant forms of a common chemical, isonicatinic aid have been found very effective in Tuberculosis according to a report by Dr. Marcus D. Kogel, Commissioner of New York City Hospitals. His observations have been confirmed in other public and private hospitals in the United States. The drugs resulted from a tuberculosis research programme undertaken many years ago by Hoffmann-La Roche Ltd. The drugs are taken by mouth.—*Medical and Pharmaceutical Information Bureau, New York.*

DETERMINATION OF COMFORT ZONE OF INDIAN SUBJECTS

The influence of thermal environment on health and disease has been a recognised fact. In the present century, a large number of research workers devoted much time in studying the influence of environment with reference to physical and mental efficiency, as a result of which a new branch of physiology called "Environmental Physiology" has come into existence.

The subjective feeling of comfort, cold and warmth is related to the meteorological characteristics and these factors can be measured by instruments.

Various workers attempted to measure environmental warmth by specially constructed physical instruments and the latest successful instrument has been found to be the C.E.T. scales (corrected effective temperature scales).

In attempting to investigate the range of comfort level for Indian subjects in a typical north Indian climate, normal C.E.T. scales have been adopted. The north Indian summer is primarily a dry hot period during which the solar radiation is usually high and the humidity is low.

Six hundred observations were available along with opinion survey of subjective sensations of comfort. From an analysis of these data, the comfortable range of C.E.T. for inhabitants of north India has been estimated.

1. Pleasant and Cool—C.E.T. below 69° was comfortable and cool.

2. Comfortable and Pleasant—C.E.T. range 69°-76° appears to be pleasant and comfortable. But people who work under outdoor conditions feel pleasant even at C.E.T. 77°-78°.

3. Comfortable Zone—C.E.T. range 77°-80° appears to be the comfortable zone. While well-acclimatized tropical subjects, who used to outdoor work in the open may often feel comfortable even at 81°, 80°-81° appears to be the border line, where men often feel neutral or slightly uncomfortable; at this C.E.T., subjects could not at once give an opinion survey without thinking a while.

In hot humid weather C.E.T. 80°-82° appears to be comfortable, when the wind velocity was in the region of 100 ft. per min.; this range was not comfortable in the dry season. It remains to be investigated whether this is due to the insensitivity of the scale in humid weather.

4. Hot and Uncomfortable—C.E.T. 81°-83° may be considered as the hot and uncomfortable range for general purposes.

5. Extremely Hot—This range combines very hot as well as intolerably hot zones. C.E.T. above 83° is very hot for the majority of subjects, while C.E.T. above 86°-87° becomes intolerably hot.

These observations were recorded on the basis of the normal scale of C.E.T., with subjects dressed in army khaki uniform or the civilian clothing of light cotton type. From general observations, however, it is observed that in dry weather when the dry bulb temperature is above 95°F., thin., light-coloured clothing is preferred while in humid weather, people feel more comfortable when the upper half of the body is bare.

Further work in this line is in progress.

—*Defence Science Organisation, New Delhi.*

CORRESPONDENCE

The Editor is not responsible for any views expressed by the contributes

COMMENT ON THE ARTICLE "A CASE OF CHRONIC MYELOID LEUKAEMIA WITHOUT HEPATO-SPLENIC ENLARGEMENT"

Sir,—I have read with interest the report of a case of chronic myeloid leukæmia without hepato-splenic enlargement by Dr. A. Chakravarty, M.D. (CAL.), which appeared in the March, 1952 issue of your esteemed journal. The writer has excluded the possibility of enlargement of liver and spleen, only by palpation and it seems justified that the upper limit of the spleen and liver should have been ascertained before distinctly commenting on the enlargement of the said organs. It is a fact that the enlargement of the spleen may not be detected by palpation till the organ has increased its size by double if not treble.

Next he says that a blood slide was sent and the report not only includes the differential count but also the total W.B.C. count. How it is possible?

He expresses that total W.B.C. 92,000 is a very high figure. But average total W.B.C. count in a case of chronic myeloid leukæmia is about 1 lac per c.mm. but a count varying from 5-10 lac per c.mm. is also possible.

In the table showing the blood picture it seems to have been rational to put down the actual differential count or at least the percentage of the myelocytes and not in terms of few or many, etc. I am etc.

6-3-52, Calcutta. D. N. SEN GUPTA

THE CONTRIBUTOR'S REPLY TO THE COMMENT

Sir—With reference to the comments of Dr. D. N. Sengupta, I have to say the following:

1. The possibility of upward enlargement of spleen and liver was not ruled out by palpation alone, as has been alleged: upward enlargements of liver and spleen are assessable clinically. In the present case there was no evidence pointing to it clinically. Further, a skiagram of the chest was taken and was submitted for publication along with my case report, which however has not been published. In the said x-ray plate, there was no evidence of any upward enlargement of liver or spleen.

2. Total W.B.C. count was not made from the slide, as has been suggested by my friend. I already stated, that there was nothing in the case to warrant a clinical diagnosis of lukæmia. A blood-slide was sent for examination, as a routine procedure. But since it contained myecolytes, the clinical pathologist himself, of his own accord, did a total

count and sent me the report. These are details, which were left out, in the narrative of my case.

3. Nowhere have I mentioned that 92,000 cm. is a very high figure for leukæmia. What I stated was—" it revealed a very high figure for leucocytes." This was comparative, compared to two earlier counts, *e.g.*, 50,000 and 62,000.

4. The counts are done by pathologists. I have simply put down exactly what the pathologists have reported.

I however, remain extremely thankful to my medical colleague who has raised these questions particularly because of his deep interest in my article. I am etc.

A. K. CHAKRAVARTY,

17-3-52, Burdwan.

REVIEWS

POONA MEDICAL SOUVENIR

The commemoration souvenir edited by Dr. K. N. Jejurikar, Joint Hony. Secretary, Poona Branch of Indian Medical Association contains very useful information regard ing the activities in respect of health problems and institutions and presents in a nutshell easily available guidance and assistance to the public.

AN ATLAS OF GENERAL AFFECTIONS OF THE SKELE-

TON—By Sir Thomas Fairbank, D.S.O., O.B.E., M.S., M.CH. (ORTH.), F.R.C.S., Pp. xx+411 with 510 illustrations August, 1951. E. & S. Livingstone Ltd., Edinburgh & London: Price 55 sh.

As a Liverpool student of Orthopædics the present writer finds the volume an invaluable link between the mouth-to-ear teaching of abstruse subjects as dealt with here and the fragmentary descriptions as contained in Brailsford's " Radiology of Bones and Joints." In fact, each subject in this treatise has been treated with a wealth of detail as if in a monograph and almost every chapter has been rounded off with a number of beautiful illustrations of the usual as well as the rarer variations of the disease described.

The subjects most neglected in the usual text books on orthopædics, nay, in books on medicine and surgery for lack of adequate up-to-date material have been treated here with elaborate as well as lucid details. Here are some instances: congenital developmental errors of metaphysis (metaphysial dysostosis and familial metaphysial dysplasia), of diaphysis (diaphysial aclasis, dyschondroplasia and osteopathia striata), of epiphysis (dysplasia epiphysialis multiplex and dysplasia epiphysialis punctata) and of combined metaphysis, diaphysis and epiphysis (achondroplasia, osteochondrodystrophy and gargoylism). There are, however, a few minor omissions *e.g.* hæmophilic changes in bones, the much-debated group of angioendotheliomatous neoplasms including pericytomas and Ewing's tumour and sarcoidosis of bones, which the present commentator wishes would be made good in the subsequent edition so as to increase the value and utility of the treatise.

Differential diagnosis, pathology, etiology, clinical and radiological features have been described with admirable clarity. Differential diagnosis in particular will be extremely useful to all professing or practising the subject.

In short, this able and likeable elder teacher and "second orthopædic opinion of Great Britain" has made a good job of it; and it is believed the volume will find a valued place on the shelf not only of orthopædic surgeons and students but also of other medical specialists.

A. K. SAHA.

YOUR QUESTIONS

Correspondents should give their names and addresses (not necessarily for publication) and include all relevant details in the questions which should be typed. Questions of medical interest only will be acceptable for this section. They should be sent in a separate envelope marked " Your Questions." Questions of general interest will be published in preference. Lack of space precludes answering all the questions received.

Q. Will you kindly let me know the drug of choice, now widely used, to create a distaste for alcohol. Now-a-days many chronic alcoholics apply to us for getting relief, specially after the prohibition policy of the Government.

Ans. The drug of choice for chronic alcoholism is Tetraethyl thiurum Disulphide (Antabuse). It acts by producing intolerance to alcohol. The addict becomes sensitive so that the subsequent ingestion of alcohol produces unpleasant symptoms of the nature of vasomotor disturbance. It interferes with the normal metabolism of alcohol in the body and produces high concentration of acetaldehyde which is responsible for the unpleasant symptoms. It is not a direct cure but a valuable aid to other methods of treatment like psychological and environmental rehabilitation.

Dose—It is given in doses of 250 to 750 mg. or 4 to 12 grs. daily and requires adjustment. Treatment is best carried out in a hospital or institution. (Ref. Dr. Ghosh's Book of Pharmacology and Therapeutics, 18th Edition).

Q. A case of young adult aged 28 years is under my treatment for " Habitual Constipation " with the prolapse of the rectum about 3 inches in length.

Previous History—Dyspepsia was present about three years back and it was cured by an eminent doctor. After this he was constipated intermitently but at the time of passing stool the protrusion of the rectum is not checked. About three years ago the lower part of the rectum protruded to a little extent and is since gradually increasing due to straining at defæcation.

Now, he has no desire for passing stool, no peristaltic movement of the lower part of the intestine (descending colon), semifluid stool is accumulated in the sigmoid flexure of the colon specially rectosigmoid junction, so he adopted the process of " passing the left index finger within the rectum for bringing out the stool " and thereby he feels temporary relief after passing some flatus. He is attacked with headache and mental dullness unless he performs the above mentioned process. The patient is in robust health and no hereditary venereal disease is present. The liver, spleen and other organs are normal.

Treatment—The patient medicines Livergen, Bicolate Tab and general purgative like Castor Oil, Liquid Paraffin etc.

Please advise me for the adoption of proper treatment in this case.

Ans. His prolapse of the rectum should be treated by operation. This must be followed by the usual treatment for constipation.

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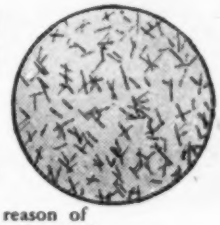

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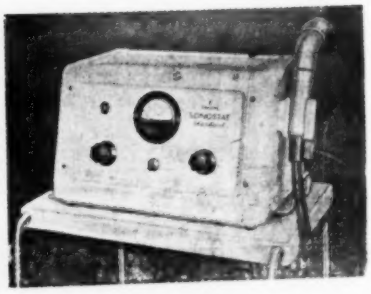

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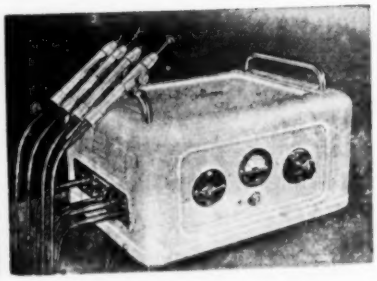

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SUPPLEMENT

Journal of the Indian Medical Association

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XVI U. P. MEDICAL CONFERENCE

The 16th U. P. Medical Conference was held at Lakhimpur-Kheri on the 25th December, 1951. The president, Dr. B. Thungamma, in course of her presidential address said:

Sisters and Brothers—It is for the first time that a woman has been elected to preside over the annual conference held under the auspices of the I.M.A. either Central or Provincial. This departure from the usual practice appears to me to be very significant and I am glad that Uttar Pradesh, which provides me with a scope to follow a useful career and a field to service, has chosen to take the lead in this matter.

Personally, I feel gratified at the honour conferred on me and elated, a woman as I am, to find my humble and simple self placed to play an authoritative role. But, knowing my real worth, however, I can hardly suppress my qualms and hide my misgivings. However, I shall count upon your kind help and full support to make the conference a success.

Our deliberations can only prove fruitful if they relate to the complex and diverse problems that confront our national life to-day and suggest ways and means for at least a partial solution, particularly of those problems touching on Public Health.

At its inception the Indian Medical Association had taken up on itself the task of looking after Public Health including obviously rural health. It is well-known that poverty and ignorance combined with social prejudices have made it always difficult to educate the people in matters of hygiene and sanitation. Now that the financial position of farmers in the villages is getting better day by day a machinery may be created to give the people the required education to raise their standard of living and to keep themselves clean and healthy so that the wastage in manpower and economic losses may be prevented. Mobile medical and propaganda units are proving very useful in other states and I hope that similar arrangements may be made in this Province and I believe the Government may count on the support of the members of the Medical Profession in this matter. Such units can only work provided there are better roads in the rural areas to the maintenance of which I should draw the attention of the Government.

DR. MRS. B. THUNGAMMA, PRESIDENT OF THE CONFERENCE

MATERNITY AND CHILD WELFARE

Our villagers suffer badly through the lack of maternity and child welfare arrangements. Nothing worth the name has so far been done either by the Government or by the Public to offer these facilities to our villagers, mostly, I am sure for want of trained personnel to conduct this work. I should emphasise therefore the need of making immediate arrangements for the training of midwives and nurses. Suitable training can always be given in the existing medical colleges with facilities for practical training work in the hospitals. Hitherto the better classes of our society have shunned this profession of nurses and midwives as they have so far contended that they do not conduce to respectability. I think, girls belonging to the rural areas coming to prosecute their studies in the cities or provincial towns may be induced to take up nursing along with domestic science which forms a subject in the present curriculum; better emoluments, and conditions of service will certainly tempt many a student to take up such course and join Government or private maternity and child welfare centres in their home areas which need to be opened as early as possible.

HEALTH EDUCATION

A new ideology has found its place in medical practice to-day seeking a combined social and clinical study of community health and sickness, often with nutritional economic assessments. While such studies cannot be carried on by busy practitioners it cannot be gainsaid that they can in addition to their professional duties of visiting patients and administering medicine help to raise standard of public health by instructing the patients and their relations about personal and environmental hygiene and prevention of the disease from which he is suffering. The mobilisation of health consciousness is our honorary task and that a doctor should feel proud to take it upon himself as ours is a noble profession.

The Government and the Board of studies may be urged to introduce hygiene in the Primary and Secondary schools as a compulsory subject which may easily be supplemented by the health propaganda department of the Government with suitable films and other demonstrations, so that the question of Public Health may always be present in the minds of the growing people from the very beginning of their primary training.

MEDICAL EDUCATION

In my opinion, it is essential that the qualified medical graduate of the future should enter his career with a working knowledge of preventive and social medicine.

It is extremely desirable that the teachers in the medical colleges throughout the period of training, should concentrate on the practical aspects of their subjects and try to develop in the students their independent line of thinking, initiative, and correct approach to the problem they will have to face in their future career.

Further, in my opinion in both the medical colleges of this province there should be ample facilities for post-graduate training and research. It would be nice to have formations of special units *e.g.*, Chest, Cardiovascular, Nutritional, and Hæmatological units, Also a Neurological, Neurosurgical, Psychological, Gastro-Intestinal unit and a Kidney and Urogenital units. Some trained personnel are already available in these places, Suitable young men may be trained up who could be later sent for advanced training abroad.

There has been confusion of view points with regard to medical education. While it is generally held that Ayurveda has its proper place, the consensus of opinion favours that all students should obtain a basic training in Anatomy, Physiology, Pathology, Midwifery and Preventive Medicine before he can be allowed to practise as a physician of any system. I agree with the contention that medical graduates are the proper persons to synthesise the existing systems by postgraduate studies and researches facilities for which may suitably be created in different centres. We must not forget that India has to play an important part in International medicine. Exclusion or neglect of modern medicine will for ever put back the hands of the clock.

Planned Parenthood

The question of planned parenthood is exercising now many a mind in this country and schemes and plans are in the offing. The health needs of the people generally of our women point to the need of introduction of contraception as unspaced and unwanted childbirths adversely affect the health of mothers and their children. As a practising gynecologist I might emphasise that this is a strain on national health and should immediately be relieved by adequate scientific and educational processes for which proper machinery and propaganda are required. Private practitioners working as family physicians can play an important role in offering proper advice when and where it is needed.

Nutrition

This province which has so long been the granary of cereals to the entire country has now been hard hit and is deficient in stock. The time old plea of harvest failure incidental to floods, want of rain, locusts and other accidents does hardly hold good. Many a difficulty can be prevented by the adoption of scientific methods. The supply of food, insufficient though it is, can further be made good in a large measure by correcting faulty methods of storage and other ways. Times without number, the press, has published how stocks of wheat, gram etc., are allowed to deteriorate before they are made available for consumption.

On a survey of the household diet of the urban working class in Britain from 1940-1949, the Ministry of Food says that "the British Working class families drank 50 per cent more milk and ate more fish, fruit and vegetable in 1949 than before the war." It would pay the Ministry of Food at the Centre to ponder over it.

The improvement of milchcattle, co-operative milk supply, and licensing of all eating houses to supply good food of specific caloric values served in with hygienic care will help us to live and live well now and hereafter.

In this connection we should request the Educational Authorities who are responsible for the intellectual and physical training of our boys and girls to see that their nutritional requirements are not overlooked. Suitable arrangements must be made in educational institutions to give the students an adequate lunch to make up for the inadequacies in Vitamins and Caloric supplies, not available in their homes for economic reasons.

Indian Drug Industry

Given sound management, whose chief aim will be service to the country and which will invest sufficiently in research and scientific personnel so as to constantly improve and discover new medicaments, there is no reason why Drug Industry should not function efficiently in this province. The Drug Institute at Lucknow established by Government ought to prove a boon to the whole country. We shall welcome the day when India can really become self-sufficient in the matter of her drug supply—provided a determined effort is made from all fronts private and official.

Medico-Political Section

We are glad to commend the innovation introduced by the organisers of this Conference this year by opening of the medico political section.

Conclusion

Good health of the people is one of the best assets of a nation and as such it is very necessary for any Government to provide liberally for the department of medical relief and public health in its budget. We would request our State Government to allocate a fair amount of its revenue for medical relief and public health in the future budgets.

On our part the members of the respective Branches of our Association should formulate a plan of action for the year and employ our best energies to give it effect during that period. An assessment of local conditions will necessarily determine the subject for which our members should work for raising the standard of health of the people among whom they live and work in addition to concentrate their efforts to implement the aims and objects of the Association.

Since strength lies in number we would request you to induce those practitioners who are still outside the enclosure to join our ranks and offer their honourable co-operation.

* * * * * *

The following resolutions were passed at the 16th Session of the Uttar Pradesh Medical Conference held at Lakhimpur-Kheri on 25th, 26th and 27th December, 1951.

Item 1: *CONDOLENCE.*

a. This Conference expresses extreme sorrow at the death of our veteran-Capt. A. P. Misir of Banaras & an Ex-President of the I.M.A. U. P. Branch (1943-44). In his death we have lost a very active and enthusiastic worker of the I.M.A. and it is a great loss to the U. P. Branch in particular. This Conference will sadly miss his guiding hand. The Conference conveys its heartfelt sympathy to the members of the bereaved family.

b. This Conference places on record its deep sense of sorrow at the demise of the following members of the profession during 1950-51 and conveys heartfelt sympathy to the members of the bereaved families.

1. Dr. S. Mehta, Aligarh; 2. Lt.-Col. D. M. Sachdev, Allahabad; 3. Dr. S. Sinha, Allahabad; 4. Dr. I. H. Rizvi, Azamgarh; 5. Dr. D. P. Ghosh, Banaras; 6. Dr. H. L. Khorana, Dehra Dun; 7. Dr. Abul Hussain, Gorakhpur; 8 Dr. J. N. Srivastava, Gorakhpur; 9. Dr. (Major) N. D Banerjee, Kanpur; 10. Dr. B. N. Varma, Lucknow; 11. Dr. P. D. Gupta, Lucknow; 12. Dr. Amir Sahai, Moradabad; 13. Dr. T. N. Gupta, Saharanpur; 14. Dr. T. S. Saksena, Shahjahanpur; 15. Dr. Sadiq Ali, Sultanpur.

Item 2: *REORGANISATION OF MEDICAL RELIEF.*

This Conference is sadly disappointed in the halting way in which the U. P. Government has carried out the unanimous recommendations of the Bhore Committee and of the U. P. Reorganisation Committee, both of which were accepted by the U. P. Government several years ago. This Conference requests the Government to prepare a definite plan for the next 5 years in consultation with the Indian Medical Association and carry out the main recommendations during that period.

Item 3: *RECRUITMENT OF MEDICAL SERVICES.*

The present method of Recruitment and Divisions in Medical and Health Services into various classes is arbitrary and highly unsatisfactory. This Conference suggests that there should be only one service known as Provincial Health Service recruited on competitive basis. This Service should have both Curative and Preventive functions.

Item 4: *LOCAL BOARD DISPENSARIES.*

This Conference recommends to the Government that all Local Boards (including District, Municipal and Cantonment Boards) Dispensaries should be taken over by the Government as soon as possible, as these local bodies are not able to run them efficiently.

Item 5: *ADULTERATION IN DRUGS.*

The U. P. Drugs Act, 1940 and the rules made thereunder (in 1945) have failed to protect both public and the medical profession from getting adulterated, under standardised and inferior quality drugs at exhorbitant prices and black-marketting still continues in drugs. This Conference therefore, recommends to the Government that immediate and stricter measures are necessary and should be taken by the Government to ensure that people get proper quality drugs at proper and reasonable prices (i) by testing Samples frequently and sending regularly for analysis (ii) by trying and giving deterrent punishment by special Tribunals and All Gazetted Medical Officers be authorised to take samples.

Item 6: *MANUFACTURE OF DRUGS IN INDIA.*

Several crores of rupees worth of drugs are imported every year into India. Special effort should be made with active help and support of the Government that manufacture of all basic and imported drugs of standard quality is undertaken in this country so that the country may become self-contained in drugs as soon as possible so as to meet any national emergency. If necessary, a cess may be levied on the manufacture of all drugs in order to raise a fund for helping the establishment of industries for the manufacture of basic drugs of proper quality.

Item 7: *QUACKERY.*

Quackery has made rapid strides in this Pradesh and is now rampant. All sorts of people are practising the modern system of medicine without having undergone any or proper training and without possessing proper qualifications. It is very necessary that urgent steps should be taken in the matter. This Conference, therefore, requests the Government that law should be passed at a very early date prohibiting practice in modern system of medicine by those who are not duly qualified in that system and exemplary punishment should be given to those who break the law. This Conference further adds that the Indian Medical Degrees Act 1916, the Medical Council of India Act 1933 and the U. P. Medical Registration Act, 1917 have failed to give any protection in this matter.

Item 8: *PUBLICATIONS OF POSTERS ETC.*

This Conference requests the Government to prohibit publications of posters, notices and advertisements of drugs, contraptions etc., of an indecent character by implementing Objectionable Advertisements Act at a very early date.

Item 9: *ADOPTION OF MEDICAL ETHICS.*

This Conference requests that the Government be moved that the other Faculties of Medicine (*e.g.*, Aurvedic, Hakimi, Dentisty etc.) be required to follow and adopt similar ethics and rules of conduct as are observed under the U. P. Reorganisation Act, 1917.

Item 10: *PROOF OF GENUINENESS OF ANY DRUG OR INSTRUMENT.*

This Conference requests that the Government be moved to establish a Central Control Board to examine the claims of all new medical preparations, instruments and proprietory foods prepared by any firm and if the claims are true a seal be issued to them which may be used in their advertisements as a sign of genuineness which will enable profession and the people to distinguish genuine articles.

Item 11: *TERRITORIAL ARMY.*

Resolved that the Territorial Army of all ranks should have a Centre in all the Divisional Headquarters instead of one Provincial Headquarter as at present.

Item 12: *ELECTRIC CONNECTIONS.*

This Conference requests the U. P. Government that special priority be given in sanctioning new electric connections and increase of load to practitioners of modern system of medicine and to Charitable Medical Institutions needed for professional use as need for electrical energy to them is not a luxury but a necessity.

13. This Conference points out the trouble caused by allowing cases of Leprosy and other infections diseases to lie on road-sides and beg. The Government should implement the Leprosy Act and take immediate steps by compulsory segregation of infectious cases, by building Home for incurables and by taking other suitable measures.

XI BIHAR PROVINCIAL MEDICAL CONFERENCE

The 11th Bihar Provincial Medical Conference was held at Jamshedpur on the 25th December 1951.

The Conference was inaugurated by the Hon'ble Shri Jagjiwan Ram, Minister in charge, Labour, Government of India. In course of a short speech he said:

"Mr. Chairman, members of the Medical Profession, Ladies and Gentlemen:

I thank you for the honour you have given to me to speak before you and to inaugurate your conference. I am not a medical man, but I have been connected with your profession in various ways.

The Medical Profession is one of the noblest professions and on it depends the health of the Nation. There are instances of Doctors neglecting their patients. I appeal to them to be more humane. Few sweet words give much more relief than medicines. In a poor country like India, the medical profession should try to devise ways and means so that medicines can be available to the patients at a cheaper rate. The Investigations and Examinations of the modern medicines should be made cheaper so that every class of people can avail of the same.

Your Association should insist upon doctors to go to rural areas which are neglected. Your Association should emphasize on refresher courses for every practitioner.

Your Association can be more useful to the country by helping the Society and ameliorating the needs of the suffering humanity.

I wish the conference a grand success.

* * * * * *

Dr. B. Mukherjee, the Chairman of the Receiption Committee in welcoming the delegates and the distinguished guests said:

Mr. President, distinguished guests, visitors and delegates:

It gives me great pleasure to extend to you a most cordial welcome to the premier steel city of the East. The city takes its name after that prince amongst men, by far the greatest industrialist of the age, who created history and revolution in the field of industrial development of India; Jamshedji Nasserwanji Tata.

Facilities for the treatment of diseases, so as far the industrial population and their near relatives of this area are concerned, are undoubtedly good. I am glad to tell you that there is an exceedingly well-equipped and well-staffed general hospital here, I mean the Tata Main Hospital comprising 420 beds, planned and organised in its early days by the first Chief Medical Officer of the T.I.S.C.O., the late Dr. Santiram Chakravarty. There is a number of outdoor dispensaries run by the T.I.S.C.O. in the different parts of the town. There are other hospitals also with limited accommodation run by the Tinplate Co., of India, Ltd., and the Indian Steel Wire Products, Ltd., The T.E.L.CO., the Indian Cable Co. and the Tatanagar Foundry Co. have their outdoor dispensaries as well. A number of Maternity and Child Welfare clinics are doing useful work in different parts of the town. The Rotary Club is also doing excellent work by running several clinics for giving relief to leprous patients free of charge.

So far I have given you the bright side of the picture, all that is good and graceful. But I would be failing in my duty if I did not also place before you the other side of the same, some of our local problems and grievances, so

that you, in your own wisdom and with your influence, may help find a solution and a remedy for them.

One of our greatest problems is, probably, overcrowding. Many more residential quarters for the employees require to be built. The land allotment policy of the Steel Company also needs liberalisation, and the people should be encouraged to build their own houses on a much larger scale. The contiguous territories also require to be developed so that satellite towns may grow up in course of time and, thus, relieve congestion here.

Then again, partly due to overcrowding and partly to other reasons, the scourge of tuberculosis has been raising its ugly head and the number of cases seems to be definitely on the increase. The Steel Company are doing their bit, having set up a Tuberculosis Clinic already. A scheme of a colony of tuberculous patients, in memory of the Late Sir Ardeshir Dalal, is also under way. But the problem is a large one and big efforts will have to be made by the State as well as the public to face this menace successfully. I am inclined to think that mass radiography and isolation of open cases under proper care and attention are perhaps the only means to check the depredations of this fell disease in this pioneer Steel City of India.

Reverting to the hospital facilities, I feel, I must say that so far as the medical requirements of the people connected with the industries and their near relatives are concerned, the hospital facilities available are undoubtedly good, both in point of cheapness and efficiency. But for this fairly large section of the population who are unattached or unconnected with the T.I.S.C.O. and other industrial concerns, the hospital facilities are very meagre indeed. Special beds and cabins are so costly for outsiders that they are out of reach for the average member of this unattached public. Charges for X-ray examinations and other pathological tests at the T.I.S.C.O. Hospital have been substantially increased, lately, for the unattached patient. Government employees however, I understand, are treated on the same footing as those employed by the industries. While I do not envy the consideration shown to the Government employees, I feel that these unattached people, whose number, in my estimate, would be more than half of the total population, do suffer, for no fault of theirs, for want of proper, adequate and cheap medical treatment and other allied facilities. They are also part and parcel of the common social fabric and pay taxes to the country's exchequer. I have nothing to say against the Steel Company and other Industries if they are unable to cater for all and sundry. Obviously, therefore, it is the duty of the State to see to the medical needs of this very large non-industrial section of the population. But here the State seems to be under the influence of a very effective soporific, sleeping away peacefully and without concern. There are a couple of Government hospitals here, one at Sakchi and the other at Jugsalai. They are, at best, poorly equipped and inadequately staffed. Indoor accommodation is also extremely limited. And with the ideal of T.I.S.C.O. hospitals before their eyes, the unattached population find little hope and confidence in them. It is therefore, absolutely necessary and desirable that the Government hospitals should be enlarged and better equipped and staffed, as early as possible, or on the alternative, some suitable arrangement should be made with the Tata Main Hospital, so that, this unfortunate section of the public may be able to get the necessary hospital facilities, at least at a reasonable cost, if not wholly free.

The Government also should see to the setting up of a good Ambulance service. The members of the unattached public and in some cases the industrial employees, also are unable to get the services of an Ambulance, unless so recommended by the T.I.S.C.O. doctor. This state of things should be remedied at once.

I would like to draw your attention to another important problem which has cropped up of late. We have been noticing with concern the fate of many cases of street accidents. Contrary to the previous practice, instead of being sent to and taken into the Tata Main Hospital straight away, these cases are at present, in the first instance, diverted to the Government Hospital, obviously for medico-legal considerations, and afterwards, if necessary, permitted to go to the Main Hospital for treatment. Much valuable time is lost by this dilatory procedure and in a serious case the life of the victim is greatly jeopardised. The right procedure would be to send the injured person to the Main Hospital, under the existing State of the Government Hospital, at once, where facilities for efficient and immediate attention are available and the police may be informed, if necessary, and the necessary medico-legal enquiries may be held at the bedside.

I shall conclude my catalogue of problems and grievances by touching upon the question of certificates. While I gratefully acknowledge a recent decision of the T.I.S.C.O. by which the employee's right to be treated by the "outside" doctor is fully recognised, I regret to say that his certificate still remains unacceptable. The position in regard to the Government Departments is no better. I hope that you would give this burning question of certificates your earnest consideration during your deliberations and find a suitable formula which may safeguard the interests of the employees, patient, the unattached treating doctor, as also the employer, whether Government or other.

A few words about our local branch of the I.M.A. and I shall have finished. The Jamshedpur Branch was formed in 1945 with only five members. At present, our membership has risen to seventy-four. Undoubtedly, a good achievement! But there are many others, who still remain outside the fold. Our membership comprises all sections of medical men, attached and unattached, and I am glad to say that our mutual relations are very good. I recall with gratitude, in this connection, the name of Col. Verghese, the Late Director of Medical and Health Services T.I.S.C.O. and one of our past Presidents, whose association spirit, was a great help in the early days of this branch. May I suggest here that the state branch may help a great deal in further popularising outlying branches, like ours, by sending out teams of distinguished medical men and specialists from time to time and arranging refresher courses, special lectures and demonstrations for the benefit of those of us who are far away from the seats of learning and research and yet willing and anxious to keep abreast of the times, in the interest of ailing humanity."

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Dr. S. K. Ghosh Dastidar, the President of the conference in his address said the following:—

"Hon. Sri Jagjiwan Ram, Mr. Chairman of the Reception Committee, Members of the Medical Profession, Ladies and Gentlemen.

I consider it a great honour and proud privilege to have been elected the President of the Bihar Branch of the Indian Medical Association, which is the mouth piece of the Medical Profession of this state. It is the highest honour that the medical profession of the State could confer on any one of its members. I sincerely wish that your choice had fallen on some one more worthy to take the helm at this most critical and yet formative period in the medical history of our country. Inspite of my short-comings, of which I am fully conscious, you have reposed your confidence in me and I am deeply grateful to you for it. I am confident that I will have the fullest co-operation from my colleagues who have assembled here and also from those who miss so much from this gathering to-day. Without your co-operation and guidance I cannot hope to discharge my responsibilities.

During the interval that has elapsed since we met at Daltonganj in November last year, the cruel hand of death has snatched away from our midst several valued friends and colleagues whose loss we mourn to-day. They are Dr. M. G. Naidu, Ex-President of the Indian Medical Association, (Central), Dr. A. N. Sarkar, Ex-President Bihar Provincial Medical Association, Dr. B. Chakravarty, Katihar, Dr. S. M. Farid M.L.A., Darbhanga, Dr. S. P. Choudhury, Bettiah, Dr. P. Gupta, formerly Civil Surgeon of Bhagalpur and also a life member of the Muzaffarpur Branch, Dr. Anantilal of Gopalganj and Dr. J. M. Rakshit of Jamshedpur.

As a humble worker and a member of the profession I have been trained to speak less and observe more. None the-less I propose to put before you my views on a few of the most burning questions of Medical Relief and Public Health in our State.

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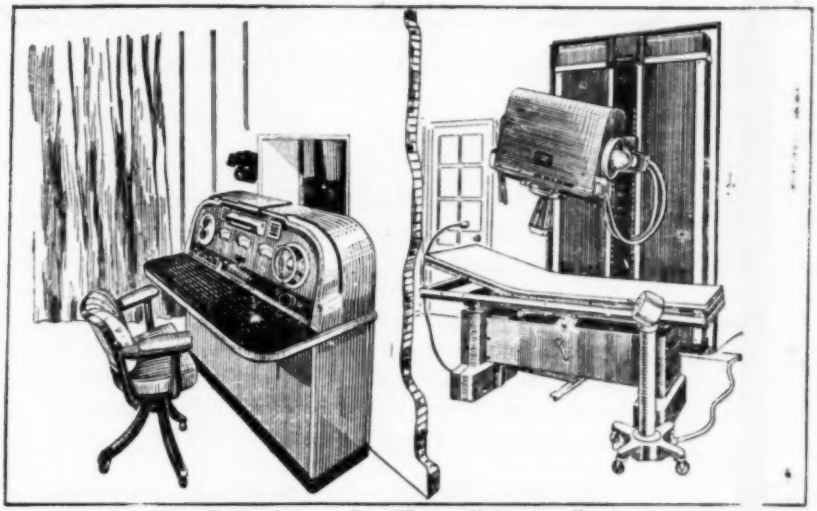

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Medical Relief

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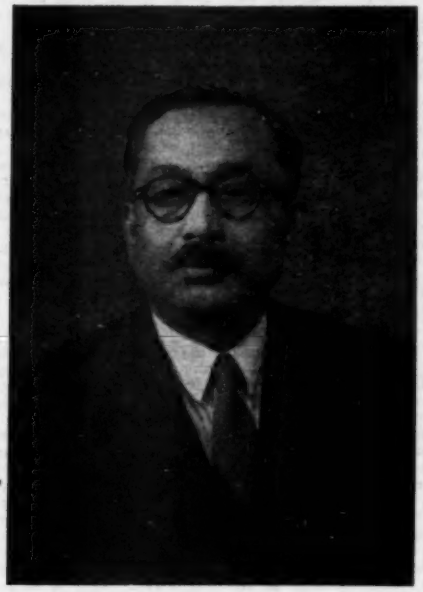

DR. S. K. GHOSH DASTIDAR, PRESIDENT OF THE CONFERENCE

in increased productive capacity." Following the very sound advice contained in the Bhore Report, our State Government had constituted a local committee which made its recommendations, not much has been done to implement the recommendations of this Committee except the small beginning that has been made in the flood stricken area of Darbhanga and Saharsa districts. I understand that the financial position stands in the way of full implementation of the report. But avenues of new income must be explored and if necessary, expenses in other directions must be curtailed to find funds for the implementation of the scheme. Implementation of the Committee's recommendations should receive top priority in the State Government's plans.

Food and Nutrition

We are passing through a very critical period of history. Our newly won freedom has brought many serious problems in its wake. The growing poverty of the villages is a matter of great anxiety and four years of Swarajya has failed to bring about any change for the better. I hope however that those who are responsible for moulding the national economy, would insist on reviving the village life. One of the major environmental factors in man's development is the food he eats. The food determines to a large extent his character, stature, state of health, activity and usefulness to society. Continued shortage of food is bound to affect the coming generations very adversely as nutrition plays a very important part in preventing sickness and in promoting positive health. The introduction on a wide scale, of school feedings is an urgent necessity to prevent malnutrition to a great extent in the growing age period. The expense involved will be more than repaid by the improvement in the health of the rising generation.

Public Health

To establish an efficient health organization, preventive and curative measures have to be properly integrated, and domiciliary and institutional services provided for the people. I would lay emphasis on promotion of positive health rather that on curing disease.

A plan as to how best to give relief to the common man should be prepared and put into effect. Our Prime Minister has often emphasized this aspect of the problem. He has said that "the Health of the villages requires special attention. The country derives its vitality from the villages. It is not enough for large imposing hospitals and other buildings to be put up in the towns; the benefits of health must be extended to the whole country side."

Local Bodies

In my opinion it is very unfortunate that overdecentralisation has been effected in the matter of medical relief and public health. The Director of Public Health and the Inspector General of Civil Hospitals have no power to ensure that their advice to the local bodies will be carried out even when it is urgently needed in the public interest.

If we probe into the causes of the unsatisfactory state of affairs in the management of the local bodies, it will be found that the relationship of the Health Officer, who is supposed to be in charge of the sanitation and health, to the local bodies is most ill defined.

Medical Relief in Rural Areas

One of the points often urged is that the main difficulty in giving relief to the rural areas lies, in the lack of medical personnel volunterring for work in rural areas. "The practice of medicine is both a science and an art, and rare indeed is the doctor who can maintain the high standards he acquired in the Medical College and in the teaching hospital, under the physical, economic and educational limitations of the isolated rural community." This accounts to a great extent for the tendency on the part of doctors to congregate in the towns in preference to the villages. This tendency is not peculiar to India. It is noticeable in America and the United Kingdom as well.

I am quite confident that members of my profession will be always willing to co-operate in any scheme formulated for this noble purpose provided:—

1. A certain standard of life and culture is assured for them in the rural areas.

2. Proper facilities are provided for the education of their children.

3. Adequate remuneration is given to them.

4. Proper facilities are made available for maintaining their professional knowledge up-to-date.

5. The standard of the Divisional and selected District hospitals which are to be placed under the charge of the experienced and qualified doctors is sufficiently raised. The Divisional and the selected district hospitals should have 200 beds, which may be increased to 300 beds. These hospitals will afford young doctors opportunities for getting acquainted with modern diagnostic methods, *e.g.*, x-ray, pathological investigations, etc., and advanced methods of medical, surgical and obstetrical treatments. The basic idea is to start as many complete hospital units as possible which will attract young qualified doctors to pursue their post-graduate education and to gather experience.

The dichotomy of purpose created by the separation of the Public Health Department from the Civil Hospital Department, stands in the way of that unified effort towards the improvement of the general health of the community which should be the prime concern of the State Medical Service. Amalgamation of these services at a certain level should form the first step towards that re-organisation of the medical facilities of the State based on a proper appreciation of the functions of medicine in the changing pattern

of society to-day. Instead of a steady effort to improve the level of nutrition and to prevent disease, vast hospitals are being built in cities on the Western pattern, regardless of the fact they may be unsuited to the needs of our country, where distances are great and transportation facilities rather meagre. What is needed is not concentration of medical man-power round one or two cities, but decentralisation with a view to bring the services nearer to the potential or real suffering humanity. With this end in view, the divisional, and at a later stage, the district hospitals should be provided with specialised services, manned by persons specially qualified for their particular duties.

Younger members of the service should be appointed as Civil Surgeons for the performance of this arduous task. The present system by which a State Medical Officer gets the rank of a Civil Surgeon at the fag end of his career, kills all initiative and impetus for hard work. I, therefore, suggest that 50 per cent of the vacancies in the Civil Surgeons cadre should be filled up by competitive selection from among the young suitably qualified doctors who have put in about 10 years of service.

At present there is no recognition of post graduate qualifications except in the recruitment to the Medical College. I feel that the doctors in the general cadre should also receive recognition in the shape of an increment of Rs. 100/- in their pay when they secure a post-graduate qualification of M.D. or M.S. or its equivalent. This practice is observed in the Uttar Pradesh and in the military service. This will serve as a definite stimulus to young doctors for acquiring higher post graduate qualifications.

We must also think of introducing mobile clinics which are doing good work in Vellore. They bring medical help to an area 10-30 miles around the hospital. Mobile clinics are made by properly equipping an ambulance. The personnel consists of two qualified doctors, two nurses one of whom has experience of midwifery, one dresser and one compounder.

If the above suggestions are given effect to, I have every reason to hope it will considerably improve the standard of medical relief in rural areas.

Medical Education

It is gratifying to see that in the last few years most of the medical schools have been brought up to the University standard and the system of castes and sub-castes in the profession, is gradually disappearing. Encouraging as that is, I do not think all is well with the system of our medical education. In the making of a good doctor, the intellectual and personal qualities of the student are as important as the educational discipline to which he is submitted. In the making of a good doctor certain traits of character have to be carefully nursed and developed. These are his curiosity and initiative, his powers of observation, his ability to arrange and interpret facts and his precision in the use of words. These can only be developed by prolonged and intimate association with teachers who have the time and leisure to give attention to each individual student. And even that is not all. Much depends on the quality of teaching, and thus on the capability of the teachers and their understanding of the true aim of teaching, which should be to impart an appreciation of method and not a knowledge of facts because method is retained as an attitude of mind when facts may be forgotten.

Since the attainment of independence there has been a tendency to very rapid expansion of our medical colleges without full consideration of the results of such expansion on the quality of training imparted to the students. Personal attention, which is the *sine quo non* for developing those qualities of mind and character which are essential in a doctor, can hardly be given under such conditions. As a result of this, I am afraid, there has been a perceptible falling off of quality and standards of our medical graduates. Quality once lost is very difficult to regain, just as a breed of animal once allowed to deteriorate, proceeds steadily in its downward course. This frenzied attempt to enlarge quantity at the expense of quality augurs badly for the future of our profession. Expand we must, but the process should be so adjusted that the strains produced in the process do not cause a breakdown of the whole structure.

The question of producing the most useful doctor within a reasonable period has not received the attention it deserves. I would suggest that the syllabus should be revised to make the young doctor more useful to the community. The time spent on the basic subjects should be cut down to allow more to be devoted to the clinical, preventive and curative side of medicine.

Post-Graduate Medicine

I would also like to sound a note of warning against the present day tendency for specialisation soon after or even side with graduation. This has led to multiplication of lectures specially didactic lectures, and the insistence upon theory, rather than the practical and clinical side of medicine which is more importan for the alleviation of human suffering, is to my mind not desirable. The rapid and wide-spread growth of specialism, however, during recent years which is the outcome of the great expansion of knowledge and increasing complexity of practical technical methods, has caught the imagination of the young doctor. In my opinion the doctor should be so trained that he will be able to handle the common faults of the human machinery. This, in other words, means that he should be an all-round scientifically trained general medical practitioner. The finer details should be left to later stages *i.e.*, to post-graduate stages. The stimulus to intensive work in a special domain at the formative stage may often narrow down the field of work, to an undesirable extent with the danger that the specialist may run the risk of losing sight of the wood on account of the trees. He looks at the diseases affecting organs, and not patients.

The proper utilization of the available medical manpower to best purpose is another problem that requires urgent consideration. The Bhore Committee has placed the requirement of trained medical graduates at 1,85,000. We have at present only 50,000 qualified medical practitioners on the register. But even this small number cannot find proper opportunities for work and living. There are many instances where doctors are working under Government and other authorities on a fixed salary on a temporary basis for several years, with no assurance about their future and the prospects of permanency in their jobs. Instances of Government employees sent for special training abroad who find that on their return there is no useful work for them are not uncommon. Due to lack of useful opportunity, the training which they received is frittered away. Such a situation brings about dissatisfaction and frustration and kills initiative for hard work. The Government, local bodies, Universities and others, who employ professional men must define their policy and give decent living wages to get the best out of their employees. This policy of drift must end and a well thought-out plan must be instituted.

Indigenous System of Medicine

A few words now on the question of the proposed synthesis of the Western with the Indigenous systems of medicine. The recommendations of the Chopra Committee on this subject have been adversely criticised by the scientifically minded educationists and also by the Indian Medical Association. We must not allow any false sense of pride and prestige to obscure our vision. It is true that the Ayurvedic system of medicine, embodying the fruits of prolonged observations and experience, had a glorious past. It is equally true that over the last many centuries it has remained static and fallen in the backwaters, while human progress has marched on. Its deductions are empirical and based on tenacity, authority or intuition and not on the method of reflective enquiry on the sure foundation of reasoned deduction from observed facts. Therefore, it cannot stand the test of scientific investigations. Scientific method is the only reliable and desirable method available to us and the chief aim of medical education should be to inculcate the scientific method in the minds of our future doctors. We can take a flight away from the path of reason and rationality in the present day world if only we are prepared to be left behind in the grand forward march of human civilization opened up by the method of reflective enquiry. The doctors of the future should be scientific and not empirical. I have my apprehension that by attempting to graft the scientific

methods of the west on our indigenous systems, we shall create a class of medicos of doubtful utility to our simple and unwary rural population. They will, I am afraid, move like 'licensed' quacks and may cause incalculable harm to our society. The establishment of colleges of Ayurvedic study where training is given in the basic sciences of Chemistry, Physics and Biology with a view to create a scientific background to the study of Indigenous medicine, is to my mind unlikely to prove very successful and has to be watched carefully. The habit of scientific enquiry once created in the minds of these students will make them dissatisfied with the empiricism of the indigenous systems. This will lead to a conflict of purposes which in the long run will prove disastrous to the prospective Ayurvedic practitioner. The Indian Medical Association has already made recommendations which, if followed, will result in finding out all that is good and scientific in the indigenous system and can be absorbed in the modern science. On the subject of Indian Medicine I should like to quote Dr. Chakravarty from his book "The Ancient Hindu Medicine."—"I suffer from no national hypnotism of megalomania. It is very likely that some of my interpretations may not find ready acceptance in many orthodox quarters. But sooner it is realised, it will be better for the communal health that the ancient medical works cannot serve us to-day any other useful purpose than to supply rich materials for the cultural history of race..... Our very great achievements in the past, which we have every reason to be proud of, instead of inspiring us with the greatest efforts to lead in arts and sciences, should not mortgage our future to the dead past. A race that does not make the utmost use of the advanced methods for the prevention of disease and preservation of health, cannot effectively compete in the struggle for existence with more forward races and succeed in the survival of the fittest. Health is the foundation of all wealth and progress. We cannot afford to cling to an empty shell, carry the dead weight of the past on our back sacrificing our future, unless all want to be counted with the extinct races."

Nursing Profession

Now I like to draw your attention to the problem of the sister profession of nursing. We too cannot succeed in our efforts unless we have a humane and efficient nursing service to support us. You may know that in England there is one nurse for even 300 persons, whereas in India one is for 34,000. This state of affairs is very unsatisfactory. A service is also as good as its human material and thus it is essential to draw the right type of women to the nursing profession if the nursing services are to be improved. I take this opportunity to make an appeal to the public at large, particularly the educated public, to send their sisters and daughters in increasing numbers to the nursing profession. Unless the profession can draw women of culture and education, the standards of the profession will not improve. On the other hand, the public and authorities must take steps to improve the existing conditions of the hospitals and the status of the profession. Trained nurses must be given the same status and recognition as other college students and their living conditions must be improved. Their allowances must be made sufficiently attractive to draw women from good homes. Only if such conditions are satisfied can we hope to get a band of devoted and self-sacrificing nurses.

Research in Medical Science

Research is necessary for the progress of the medical science. The sulfa group of drugs and the antibiotics are the result of research of recent years. Two factors are necessary. Firstly, the laboratories in the Colleges should be fully equipped on modern lines. The days of the individual researcher seem to have gone. The whole process is so complicated that it requires an elaborate technical, clerical and statistical staff. Secondly, sufficient zeal on the part of members of the medical profession is needed. I believe, there is no lack of zeal or initiative on the part of medical men and I am sure whenever the Hospitals and Laboratories are fully equipped we will achieve a good deal in the direction of research.

Industrial Hygiene

The rapid way that India is being industrialised, it is high time that quick measures have to be adopted to protect the health of the workers, the majority of whom is ignorant of the elementary principles of the hygienic measures adopted in that particular avocation. These measures come within the purview of the Labour Department of the Central Government at Delhi. I must confess, I am not aware of the details of the various measures which have been adopted or are likely to be adopted in near future. I take this opportunity of inviting the attention of Hon. Sri Jagjiwan Ram who is amongst us to-day, to expedite the measures as early as possible.

Ladies and Gentlemen, I have already taken much of your time and I will not tax your patience much longer. But before I close I wish to draw your attention to two things. Our association very badly requires its own home. Sometime ago our State Government promised to give us some land, on which we could build a home for us. So far it has not materialised. I wish the matter could be expedited and the land promised to us be made available at an early date. The other thing to which I wish to draw your attention, is more important. I have a feeling that since the attainment of independence there has been a distinct tendency among us to shirk hard work. We cannot hope to build the future of our country unless we are prepared to work hard and work honestly. Instead of talk, we want hard work and steady effort. Freedom brings many added responsibilities and it is up to us to make our newly earned freedom the means to the betterment of our people and the glory of our country.

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ANANTAPUR BRANCH—A meeting of the branch was held on 19-4-52 with Dr. K. Rajamannar, in the chair, in which all members were requested to give free medical service to people in the famine-stricken areas. Appeals for monetary help was also made.

A paper on Acute Anterior Poliomyelitis was read by Dr. Bhaskar Rao Karnad. Some interesting X-ray photographs were also shown.

BANARAS BRANCH—In the annual general meeting of the branch, Dr. R. N. Moitra, and Dr. L. R. Mehtra, were elected as secretaries (The names of Dr. S. P. Srivastava, and Dr. Ganga Singh, were published as secretaries through inadvertence).

BETTIAH BRANCH—In a meeting of the branch held on 27-1-52 the members condoled the sad death of Dr. T. C. Guha, and a copy of the resolution was sent to the bereaved family.

In another meeting of the branch held on 30-3-52 Dr. H. N. Mitra, gave a talk on Hæmatochyluria and Dr. B. K. Bhardia, on "Old reminiscences of his student (medical) life. Eighteen members were present.

BIHAR STATE BRANCH—The second meeting of the Provincial Working Committee was held on 14-4-52, conjointly with the Patna Medical Association. The members condoled the tragic death of Dr. (Miss) Hector. Purulia branch was revived and the area of Dhanbad branch was extended. Dr. P. N. Banerjee, opened a discussion on Prevention of Quackery, in which all members partiripated. The meeting endorsed the aims and objects of the International Congress of Doctors, but regretted its inability to send delegates.

BERHAMPORE (KHANGRA) BRANCH—The annual meeting of the branch was held on 16-3-52. After the secretary's report was read and accepted, new office-bearers for 1952 were elected with Dr. S. N. Bagchi, as president and Dr. A. B. Majumdar, as secretary.

BHOWALI BRANCH—The third general meeting of the branch was held on 21-2-52 with Dr. Khazan Chand, in the chair. Ten members attended. The President spoke on his impression of the IX All-India T. B. Conference, Lucknow.

BONGAON BRANCH—In a meeting of the branch held on 27-1-52, Dr. Jiban Ratan Dhar, was felicitated on his being elected as a member to the West Bengal Assembly.

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A clinical meeting of the branch was held on 16-3-52 with Dr. J. R. Dhar in the chair. Dr. A. K. Sinha, read a paper on Jaundice.

CACHAR BRANCH—A meeting of the branch was held on the 23rd February, 1952 with Dr. P. C. Das in the chair. Capt. L. Rahman read a paper on the study of abnormal symptoms in appendicular inflammations which was followed by discussion.

CALCUTTA BRANCH—The second meeting of the Executive Committee of the branch was held on 9-2-52. Fourteen members were present. The proceedings of the last meeting was confirmed. Nine new members were enlisted. The observations of the *ad hoc* committee regarding the draft rules of the I.M.A. were approved. A sub-committee was formed with seven members to consider the advisability of transfer of the Albert Victor Leper Hospital to Bankura from its present site, as contemplated by the Government.

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The third meeting of the Executive Committee of the branch was held on 13-3-52. Twentynine members were present. Seven new members were enlisted. A sub-committee of 7 members was formed to give effect to the proposal of publishing a Quarterly News Bulletin.

CHAIBASA BRANCH—A meeting of the branch was held on 21-1-52. Fifteen members were present. The date for the next annual conference of the branch was fixed provisionally as the 13th April, 1952.

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A meeting of the branch was held on 10-3-52. Twelve members were present. The date of the annual general meeting was fixed as the 20th April, 1952. Dr. N. Hussain was elected the chairman of the Reception Committee and Dr. R. P. Day, the secretary.

CHINGLEPUT BRANCH—The annual meeting of the branch was held on the 24th November, 1951. Dr. A. S. Johnson, was in the chair. Office-bearers for the year 1951-52 were elected with Dr. P. S. Srinivasan, as president and Dr. R. Varadarajan, as Secretary. The statement of accounts of the previous year was passed.

Dr. A. S. Johnson, after the normal business was over, gave an interesting lecture on "Place of mind in the origin and treatment of diseases."

DOOARS BRANCH—The twelfth annual meeting of the branch was held on the 16th March, 1952 with Dr. G. N. De, in the chair. The joint secretary presented the annual report for 1950-51. There were five meetings of the Executive Committee during the year. Membership increased from 143 to 153. Office-bearers for 1951-52 were elected with Dr. G. N. De, as president and Capt. D. K. Bagchi, as secretary.

FEROZEPORE BRANCH—In a clinical meeting of the branch held on 19-2-52, Dr. B. L. Kapur, gave a lecture on Family Planning. About one hundred non-medical men attended the meeting besides the members of the branch.

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An ordinary meeting of the branch was held on 4-3-52 with Dr. Raja Ram Bhola, in the chair. The following scientific papers were read: (1) A Case of Peri-Arteritis Nodosa by Dr. Ferris. (2) A Case of Lymphadenitis by Dr. P. C. Jain. (3) Observations on a case of Hodgkin's Disease by Dr. Ferris. (4) Infra-red Rays by Dr. Harnam Singh.

GAUHATI BRANCH—The annual meeting of the branch was held on 23-12-51. Twenty members were present. Office-bearers for 1952 were elected with Dr. K. C. Baroosh, as president and Dr. U. N. Baruah, as secretary. Dr. D. K. Sen, read a paper on "Misapplication of Drugs in Medical Practice" which was discussed by the members.

GHUGUDANGA BRANCH—A meeting of the branch was held on 9-2-52 with Dr. Saratsashi Sarkar, in the chair. Dr. A. D. Mukharji, was accorded felicitations on his being elected a member of the West Bengal Assembly. Eighteen members were present.

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A meeting of the branch was held on 24-2-52. Seventeen members were present. Dr. H. Basu, read a paper on Diarrhœas in Children.

FEROZEPORE BRANCH—In a meeting of the branch held on 1-4-52, Col. P. C. Datta, Director of Health Services, Punjab, was entertained.

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A public meeting was arranged by the branch on 2-4-52 where Col. P. C. Dutta, spoke on Nutrition and Population Control.

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In a meeting of the branch held on 8-4-52 with Dr. Raja Ram Bhola, in the chair, Dr. Chamba Lal Spoke on Tropical Sore.

GIRIDIH BRANCH—In the annual meeting of the branch, held on the 21st October, 1951, Dr. H. C. Chatterjee, was elected the president and Capt. B. Ghosh, the secretary for the year 1951-52.

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A clinical meeting of the branch was held on the 25th November, 1952. Dr. N. K. Das, read a paper on "Chloromycetin."

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A meeting of the branch was held on the 3rd January, 1952. Dr. A. K. Roy Chowdhury of Calcutta was the chief guest. He gave an illuminating discourse on Infantile Cirrhosis of the Liver.

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In a meeting of the branch held on the 16th March, 1952 with Dr. I. Ahmed, in the chair, the members condoled the sad and untimely death of Major B. C. Chatterjee who took keen interest in the working of this branch.

JAGATDAL BRANCH—A meeting of the branch was held on 26-2-52 at the Bhatpara Municipal Hall. Dr. S. P. Bhattacharyya gave a lecture on Diarrhœa in Children.

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A meeting of the branch was held on the 23rd March, 1952. Dr. N. L. Sur was in the chair. Dr. B. K. Sengupta read a paper on Common Ear Nose and Throat diseases.

KANPUR BRANCH—In a meeting held on 18-4-52 with Dr. B. N. Bhallav, in the chair, Dr. Mohan Lall spoke on (1) Keratoplasty and need of Public Co-operation (2) Common Eye Diseases in India and the modern treatment.

Films on Keratoplasty and Care of the Eye, were also shown.

KOTHAGUDIUM BRANCH—The first meeting of this newly formed branch was held on 7-3-52 with Dr. T. C. Ramchandani, as President. A paper on Rabies was read by Dr. S. Vaidyanathan.

MADRAS BRANCH—In a meeting of the branch held on 14-12-51 the members entertained Lt.-Col. Sir A. Lakshmanswamy Mudaliar who had been elected for the fourth term as the Vice-Chancellor of the Madras University and also Dr. P. Arunachalam, who had been appointed as the Director of Medical Services, Government of Madras.

Dr. T. S. Tirumurti, Dr. U. Krishna Rau, and Dr. K. Narayanamurthy, accorded felicitations to the guests.

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The President and the members of the branch gave a party to the members of the Provincial Council on 27-1-52. Dr. T. S. Tirumurti congratulated Dr. U. Krishna Rau, on his phenomenal success in the recent election to the State Assembly.

MALABAR BRANCH—A meeting of the branch was held on 23-2-52. Dr. C. K. Menon presided. It was resolved to help the sale campaign of the "health seals" Dr. T. Bala Krishnan gave a lecture on Ectopic Gestation.

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A meeting of the branch was held on 5-4-52 with Dr. C. K. Menon in the chair. After the normal business was over an interesting clinical case was demonstrated by Dr. C. K. Menon. Dr. M. K. Mohammed Kova, then read a paper on Congestive cardiac failure in general practice, which was very much appreciated.

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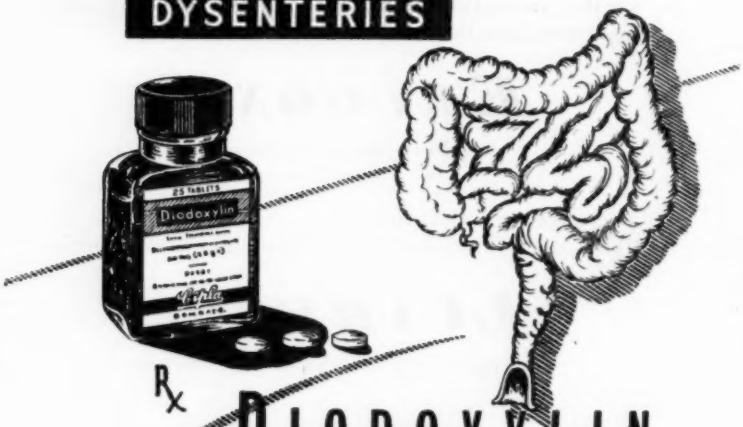

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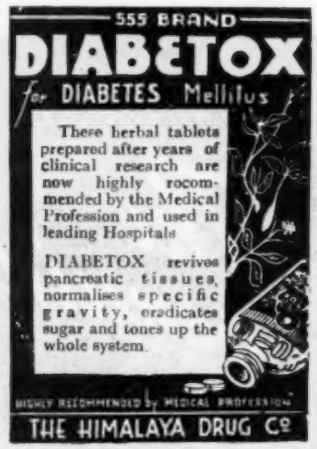
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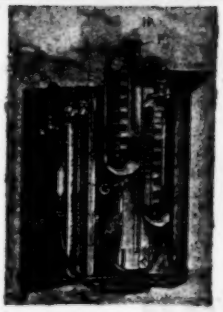

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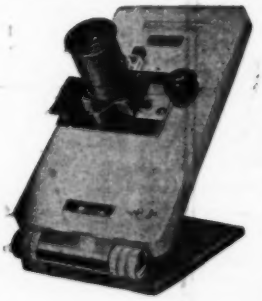

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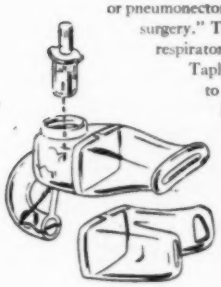

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1. Taplin, G., Cohen, S., and Mahoney, E. (1948), Prevention of Postoperative Pulmonary Infections, J. Amer. Med. Assn., 138:4, Sept. 4.

2. Krasno, L., and Rhoads, P. (1949), The Inhalation of Penicillin Dust; Its Proper Role in the Management of Respiratory Infections, Amer. Prac., 11:649, July.

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